

Bonanza Project

CONSTRUCTION SPECIFICATIONS

AMR/047/904

Spring, 2006

Requisition Number 560 62000000002

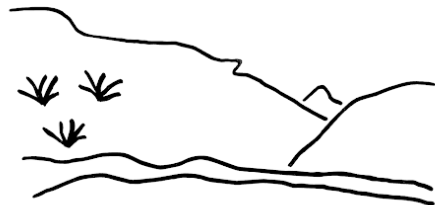
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Uintah County, Utah

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UTAH NATURAL RESOURCES
Abandoned Mine Reclamation Program
Salt Lake City, Utah



Utah Oil Gas and Mining

Copy of 30

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**STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS & MINING  
ABANDONED MINE RECLAMATION PROGRAM**

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CONSTRUCTION SPECIFICATIONS  
FOR

**Bonanza PROJECT**  
**RECLAMATION CONSTRUCTION**

**Uintah County, Utah**

Requisition Number RX 560 62000000002

State of Utah

Department of Natural Resources  
Division of Oil, Gas and Mining  
Abandoned Mine Reclamation Program  
1594 West North Temple, Suite 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114-5801  
(801) 538-5340  
(801) 359-3940 fax  
<http://www.ogm.utah.gov/amr/contract.htm>

***~~~ This is NOT a standard DFCM Specification Package ~~~***



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## Project Summary And Bidding Check List

Sealed bids will be received by the Division of Purchasing, 3150 State Office Building, Salt Lake City, for the BONANZA PROJECT RECLAMATION CONSTRUCTION in Uintah County, Utah. Bids will be received until 2:00 P.M., on Wednesday, April 12, 2006, at which time they will be opened and read aloud in the Division of Purchasing offices.

The WORK consists of reclamation construction at abandoned gilsonite mines located in Uintah County, Utah. The work includes probing of mine areas, backfilling of mine shafts, installing mine closures and includes incidental tasks such as access improvement and revegetation of disturbed areas. Details of the WORK are contained in the Specifications.

Specifications may be obtained from the Division of Oil, Gas, and Mining, 1594 West North Temple, Suite 1210, Salt Lake City, for a nonrefundable fee of twenty dollars (\$20.00). Checks should be made payable to the Division of Oil, Gas and Mining.

**AN OPTIONAL PRE-BID MEETING WILL BE HELD FOR ALL BIDDERS ON TUESDAY, APRIL 4 AT NOON.** Meet south of Ouray, Utah at the Ouray Bridge on SR88, 17 miles south of the junction with US Highway 40/191, 17 miles south of Vernal at Noon. The meeting is expected to last most of the afternoon and will involve driving and hiking over rugged terrain. High clearance four-wheel-drive vehicles are recommended. This meeting is optional. *Because of the special nature of abandoned mine closure work, bidders are strongly encouraged to attend the pre-bid meeting.*

Questions about bidding procedures should be directed to the Division of Purchasing. Contact person is Paul Mash, Purchasing Agent.

Bids should be delivered to:

Division of Purchasing  
3150 State Office Building  
Salt Lake City, Utah 84114  
(801) 538-3026 Fax: (801) 538-3882

Technical questions about the project should be directed to the project manager at the Division of Oil, Gas and Mining. Contact person is:

Louis A. Amodt, Project Manager  
Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801  
(801) 538-5360 Fax: (801) 359-3940  
E-mail: louisamodt@utah.gov

The following is a check list of items that **must** be provided with the bid documents:

- ☐ Division of Purchasing bid documents (Invitation to Bid and any other required documents)
- ☐ Proposal
- ☐ Agency Contract Bond Statement
- ☐ Bid Security (Bid Bond or Cashier's Check)
- ☐ Minority and Woman Business Enterprise Representation
- ☐ Bid Schedule
- ☐ Photocopy of current Utah Contractor's License

### *Required Submittals:*

- |                                                          |                                                          |
|----------------------------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> Section 0230, Part 1, 1.02      | <input type="checkbox"/> Section 0255, Part 1, 1.02, C   |
| <input type="checkbox"/> Section 0240, Part 1, 1.02, A   | <input type="checkbox"/> Section 0270, Part 1, 1.02, A-B |
| <input type="checkbox"/> Section 0250, Part 1, 1.02, A-B | <input type="checkbox"/> Section 0280, Part 1, 1.02, A-D |
| <input type="checkbox"/> Section 0251, Part 1, 1.02, A.1 | <input type="checkbox"/> Section 0290, Part 1, 1.02, A-B |
| <input type="checkbox"/> Section 0254, Part 1, 1.02      |                                                          |

The following items are required within 24 hours after bid opening from the apparent two low bidders only. They may be submitted with the bid at the bidder's option or convenience.

- ☐ Bidder's Proposed Subcontractors, Suppliers & Vendors List
- ☐ AVS Eligibility Check information: AML Contractor Ownership & Control Information Package

**Bids must be delivered to the Division of Purchasing only. Do NOT deliver bids to DOGM.**

## Instructions To Bidders

### 1. Request for Bids

The Utah Division of Purchasing is accepting bids for the Bonanza Project. The WORK consists of probing mine areas, backfilling of mine areas, 14 mine closures, site grading and earthwork, and revegetation of disturbed areas at abandoned gilsonite mines in Uintah County, Utah. Details of the WORK are contained in these Specifications. **Sealed bids are due on Wednesday, April 12, 2006, no later than 2:00 P.M., at which time they will be opened and read aloud at the Division of Purchasing's office.**

### 2. Qualifications of Bidders

All CONTRACTORS must be currently licensed in Utah for the type of work to be done. Bidders shall submit a photocopy of their current Utah license covering the type of work to be done with their bid.

All CONTRACTORS who have previously performed WORK on a Utah Abandoned Mine Reclamation Program (UAMRP) project have been evaluated based on the Contractor Performance Rating Form (Appendix C). A rating of ten points or more is required to bid on this project.

### 3. Drawings and Specifications

Drawings and Specifications may be obtained from the Division of Oil, Gas and Mining for the amount stated in the Project Summary and Checklist. Checks should be made payable to the Utah Division of Oil, Gas and Mining. The payment is nonrefundable.

### 4. Pre-bid Meeting

**An optional pre-bid site meeting will be held for all interested bidders on Tuesday, April 4, 2006 at Noon.** Meet south of Ouay at Ouray Bridge on SR88, 17 miles south of the junction with US Highway 40/191, 17 miles south of Vernal. The meeting is expected to last most of the afternoon and will involve driving and hiking over rugged terrain. High-clearance four-wheel-drive vehicles are recommended.

This meeting is optional. Attendance is not required to bid, but attendance should result in a more responsible bid. Abandoned mine closure work is different from standard residential or commercial construction. It requires specialized work in unusual conditions and unique circumstances.

*Because of the special nature of abandoned mine closure work, bidders are strongly encouraged to attend the pre-bid meeting.* If attendance at the meeting is not possible, bidders should make every effort to examine the project on their own time. Abandoned mines are hazardous. Do not enter the mines.

### 5. Proposals

Before submitting a proposal, each bidder shall carefully examine the drawings, specifications and other contract documents and shall visit the site of the WORK; shall fully inform himself or herself as to all existing conditions and limitations; and shall include in the proposal the cost of all items included in the CONTRACT. CONTRACTOR shall fill out all blanks and include all forms and submittals, or be subject to having the bid disqualified. (See the checklist of bid items on page 1).

The pages required for bidding are included in these specifications. For convenience, additional unbound copies of these pages will be distributed at the pre-bid site meeting or they may be printed from the electronic versions of the specifications. The bidder must submit the Proposal, Agency Contract Bond Statement, Bid Bond, Minority and Woman Business Enterprise Representation, Bid Schedule, photocopy of Utah contractor's license, and required submittals in the sealed bid, along with the required Division of Purchasing bid documents.

**Deliver proposals to the Division of Purchasing only. Do not deliver proposals to DOGM.**

6. Contract and Bond

The contract agreement will be on a form similar to that which is bound in the specifications. The completion date of construction will be as indicated in the proposal. The successful bidder, within 14 days after the bid opening, will be required to furnish a performance bond and a payment bond in an amount equal to one hundred percent (100%) of the contract price, said bonds shall be secured from a company satisfactory to OWNER. **The surety company must be a U.S. Department of Treasury (Circular 570) listed company.**

7. Listing of Subcontractors

The experience and responsibility of Subcontractors may have bearing on the selection of a CONTRACTOR by the OWNER.

The apparent two low bidders shall deliver to OWNER within 24 hours (excluding Saturday, Sunday, and State holidays) for OWNER's approval, a list of the names of Subcontractors to be furnished for each of the principal parts of the work and the corresponding dollar amounts. Each principal part shall mean a subcontract dollar value in excess of \$5,000. A form for this submission is included in these Specifications. Such list shall be binding upon the CONTRACTOR; however, OWNER has a right to reject any or all Subcontractors listed or unlisted which OWNER feels are unqualified to do the work.

OWNER may withhold award of CONTRACT to any particular bidder if one or more of his or her proposed Subcontractors are considered by the OWNER to be unqualified.

8. Interpretation of Plans and Specifications

If any person contemplating submitting a bid for the proposed CONTRACT is in doubt as to the true meaning of any part of the drawings, specifications or other proposed CONTRACT documents, he or she may submit to the Division of Oil, Gas & Mining a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery.

**Any interpretation of the proposed documents will be made only by addendum duly issued. A copy of such addendum will be mailed or delivered to each person receiving a set of documents, and posted on the UAMRP website. The OWNER will not be responsible for any other explanations or interpretations of the proposed documents.**

9. Addenda or Bulletins

Any addenda or bulletins issued during the time of bidding shall become part of the documents issued to the bidders for the preparation of the bid, shall be covered in the bid, and shall be made a part of the CONTRACT.

10. Bid Schedule

Bidding CONTRACTORS shall examine the specifications and the Bid Schedule and *fill in all blanks* of the CONTRACTOR's Proposal and Bid Schedule and submit all required information contained in the Specifications Schedule, including required submittals, or have the bid subject to disqualification.

11. Award of CONTRACT

The CONTRACT will be awarded as soon as possible to the lowest responsible bidder, provided the bid is reasonable and is in the interests of the OWNER to accept. Responsible bidders will be considered to be those bidders who have fully evaluated the work to be performed, as detailed in their bids. For bidders who have previously performed WORK on a UAMRP project, evaluation of the responsibility of the bidder will also include consideration of past performance on AMR contracts for OWNER. Both the Lump Sum Amount and the Variation in Quantities Unit Price for all work items will be considered in awarding the CONTRACT. Lump Sum Amounts do not have to equal the product of the estimated quantity times the Variation in Quantity Unit Price, but OWNER

may reject a bid if unit prices are substantially out of line with the Lump Sum Amount. The OWNER reserves the right to waive any technicalities or formalities in any bid or in the bidding.

12. Qualifications

The CONTRACTOR's and Subcontractor's past performance, organization, equipment, and ability to perform and complete their contracts in the manner and within the time limit specified will be elements along with the cash amount of the bid, which will be considered by the OWNER in the letting of the CONTRACT. A rating of ten points or more on the Contractor Performance Rating Form (Appendix C) is required for any CONTRACTOR who has previously performed WORK on a Utah AMR project. The CONTRACTOR shall comply with and require all of his or her Subcontractors to comply with the license laws as required by the State of Utah.

13. Cost Breakdown

The CONTRACTOR shall, before starting WORK, submit to OWNER a cost breakdown showing the cost of various segments of the WORK according to a specification heading, the total amount equaling the CONTRACT price. This breakdown shall be used as the basis for the payment of estimates as stated in the contract documents.

14. Right to Reject Proposals

The OWNER reserves the right to reject any or all proposals.

15. Time is Essence and Award of CONTRACT

Time is of the essence in award of the CONTRACT.

16. Withdrawal of Bids

Bids may be withdrawn upon written or electronic request received from bidders prior to the time fixed for opening. Electronic request via FAX or E-mail must be received by OWNER in written form before bid opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.

17. Bid Security

Bid Security in the amount of five percent (5%) of the bid, made payable to the Division of Oil, Gas & Mining, shall accompany bid. If a certified or cashier's check is used in lieu of bid bond, a current certificate from an approved surety company guaranteeing execution of a 100% Performance Bond and 100% Payment Bond must be on file with the OWNER.

18. Applicant Violator System (AVS) Eligibility Check

Federal regulations (30 CFR 874.16) effective July 1, 1994, require all successful bidders on contracts funded through Title IV of the Surface Mining Control and Reclamation Act (SMCRA) of 1977 to be eligible under 30 CFR 773.15(b)(1) to receive a permit to conduct surface coal mining operations. In general, this means that the Utah Abandoned Mine Reclamation Program may not hire a contractor who is or whose company is associated with a coal mine operator with outstanding unabated violations under SMCRA. The regulations further require that contractor eligibility be confirmed by the Applicant/Violator System (AVS) at the U.S. Office of Surface Mining (OSM). Compliance checks are also required for all subcontractors receiving 10% or more of the total contract amount.

19. Buy American Act

Compliance with the Buy American Act is required for this project. The Buy American Act requires the use of domestically produced materials.

20. Electronic Specs Available

OWNER has electronic versions of the Contract Specifications available. Files include the text of the Contract Specifications (as a Microsoft Word 2000 file and as an Adobe Acrobat \*.pdf file), the maps (in Adobe Acrobat \*.pdf format), and a spreadsheet with the Appendix A mine descriptions and closure specifications (as an Excel \*.xls file). The spreadsheet file may be especially useful in preparing a bid because it can automate the arithmetic. [Note: Files in Adobe Acrobat \*.pdf format are readable with Adobe Acrobat Reader software installed on most PC's and available free online.] Select files may be available for download from the Division of Purchasing website at <http://www.purchasing.utah.gov/bidprocessing/currentbids.asp> or from the DOGM website at <http://www.ogm.utah.gov/amr/contract.htm>. Any questions regarding digital data should be directed to Louis A. Amodt, 801-538-5360, e-mail: [louisamodt@utah.gov](mailto:louisamodt@utah.gov) or Ken Wyatt, 801-538-5266, e-mail: [kenwyatt@utah.gov](mailto:kenwyatt@utah.gov). Because downloading leaves no record, bidders who download specifications are encouraged to subscribe to the "Updates" feature on the Division of Purchasing website and/or to provide contact information to Louis Amodt so that they can be put on a notification list in case there is an addendum.



## Proposal

NAME OF BIDDER \_\_\_\_\_

DATE \_\_\_\_\_

**TO THE DIVISION OF PURCHASING  
3150 STATE OFFICE BUILDING  
SALT LAKE CITY, UTAH 84114**

Re: RX No: 560 62000000002

Gentlemen:

The undersigned, in compliance with your invitation for bids for the

BONANZA PROJECT RECLAMATION CONSTRUCTION

having examined the Drawings and Specifications, related documents, and the site of the proposed work and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of labor, hereby propose to furnish all labor, materials, and supplies as required for the WORK in accordance with the CONTRACT documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the WORK required under the CONTRACT Documents of which this Proposal is a part. Negotiation of BID PRICE shall be completed with the OWNER prior to final execution of the CONTRACT.

I/We acknowledge receipt of the following addenda: \_\_\_\_\_

For all WORK shown on the Drawings and described in the Specifications, I/we agree to perform for the sum of:

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
(In case of discrepancy, written amount shall govern)

I/We guarantee to complete the WORK within 45 calendar days after receipt of Notice to Proceed, should I/we be the successful bidder.

For your consideration, I/we further propose the following ALTERNATIVES for the following total amounts to be added/deducted to/from the above bid amount:

\_\_\_\_\_ Add \$ \_\_\_\_\_ Deduct \$ \_\_\_\_\_

For your consideration, I/we propose an alternative amount of time to complete the WORK after Notice to Proceed, should I/we be the successful bidder. Such an extension allows the following total amount to be deducted from the bid amount:

Alternative: \_\_\_\_\_ Total Calendar Days \_\_\_\_\_ Deduct \$ \_\_\_\_\_

This bid shall be good for 45 days after bid opening.

Enclosed is \_\_\_\_\_, as required, in the sum of \$ \_\_\_\_\_  
(Bond or Check)

## PROPOSAL

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If applicable, the CONTRACTOR shall certify that all reclamation fees or civil penalty assessments required by the provision of the Surface Mining Control and Reclamation Act of 1977, P.L. 95-87, 30 U.S.C. Sec 1201 et seq., have been paid. Provided further, this certification requirement shall also apply to all Subcontractors utilized by the successful bidders.

Upon receipt of notice of acceptance of this bid, the undersigned agrees to execute the CONTRACT within five (5) days and deliver OWNER's protective bond (performance and bid) in the prescribed form in the amount of 100% of the general construction contract price for faithful performance of the CONTRACT. The certified check, cashier's check or Bid Bond attached, in the amount not less than five percent (5%) of the above BID PRICE, shall become the property of the Division of Oil, Gas & Mining in the event that the CONTRACT is not negotiated and/or the OWNER's Protective Bond delivered within the time set forth, as liquidated damages for the delay and additional expense caused thereby.

### SUBSTITUTIONS AND ALTERNATIVES:

The following substitutions and/or alternatives of materials and/or equipment are proposed for your consideration:

| Item  | Manufacturer and Description | Addition | Deduction |
|-------|------------------------------|----------|-----------|
| _____ | _____                        | \$ _____ | \$ _____  |
| _____ | _____                        | \$ _____ | \$ _____  |
| _____ | _____                        | \$ _____ | \$ _____  |

CONTRACTOR shall furnish and attach to this proposal all submittals as required in the specifications.\*\*\*

Section 0230, Part 1, 1.02  
Section 0240, Part 1, 1.02, A  
Section 0250, Part 1, 1.02, A-B  
Section 0251, Part 1, 1.02, A.1  
Section 0254, Part 1, 1.02, A

Section 0255, Part 1, 1.02, C  
Section 0270, Part 1, 1.02, A-B  
Section 0280, Part 1, 1.02, A-D  
Section 0290, Part 1, 1.02, A-B

The undersigned CONTRACTOR's License Number for Utah is: \_\_\_\_\_

Type of Organization:

\_\_\_\_\_  
(Corporation, Co-Partnership, Individual, etc.)

SEAL  
(If a Corporation)

\_\_\_\_\_  
(Tax ID No.)

Respectfully submitted,

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Address

\_\_\_\_\_  
Authorized Signature

**STATE OF UTAH**  
**Division of Purchasing**  
**Agency Contract Bond Statement**

**BIDDING REQUIREMENTS**

A 5% bid bond or cashier's check is required by all vendors bidding on this project. The bid bond must be attached to bid **or it will be disqualified**. Checks submitted will be returned certified mail after an official award has been made.

**AWARD REQUIREMENTS**

A 100% performance/payment bond will be required from the award vendor within 14 days after notification of award. Bonds must be in the form of a cashiers check (no personal or business checks) or a surety bond from a licensed surety company doing business in the State of Utah.

Performance/payment bonds (or checks) will be **held as security for a period of 12 months after completion of project**, per state law. Checks submitted will be returned certified mail only after this specified time. Bidder's name must be the same on both the bid forms and all bonds submitted.

Please indicate which method of bonding will be used if awarded this job:

\_\_\_\_\_ 100% CASHIERS CHECK

\_\_\_\_\_ 100% PERFORMANCE/PAYMENT BOND

Bond/Ins Company \_\_\_\_\_

Agent Name \_\_\_\_\_

Fax # \_\_\_\_\_ Phone # \_\_\_\_\_

Upon awarding, the requesting agency will fax a verification to the bonding company listed above to start the bonding process. It is then the responsibility of the vendor to follow through with their bonding agent to assure the bond is processed. After the bonding company sends the bond to vendor for signatures, it is the responsibility of the vendor to mail or hand carry the original bond (no copies or faxes accepted) to the requesting agency, to the attention of the contract person listed on the bid. **No work can commence until the requesting agency has receipt of this performance/payment bond.** After this time the contract will be officially released to the award vendor.

## Bid Bond

\_\_\_\_\_  
Date Bond Executed

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Sum of Bond

KNOW ALL MEN OF THESE PRESENTS, that we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the STATE OF UTAH, ACTING BY AND THROUGH THE DIVISION OF OIL, GAS AND MINING OF UTAH, IN THE SUM OF THE AMOUNT STATED ABOVE, FOR THE PAYMENT OF WHICH SUM WELL AND TRULY TO BE MADE, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents. THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the principal has submitted the accompanying bid, dated as shown above, for

\$ \_\_\_\_\_

NOW THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that if the said principal shall execute a CONTRACT and give bond to be approved by the Obligee for the faithful performance thereof within ten (10) days after being notified in writing of such CONTRACT to the principal, this obligation shall then be null and void; otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\_\_\_\_\_  
Individual or Partnership Principal

\_\_\_\_\_  
Corporate Principal

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Business Address

NOTE: If certified or cashier's check is used in lieu of Bid Bond, a certificate from an approved surety company guaranteeing execution of a full performance bond must accompany bid.

By: \_\_\_\_\_

Affix  
Corporate  
Seal

\_\_\_\_\_  
Title

\_\_\_\_\_  
Corporate Surety

\_\_\_\_\_  
Business Address

By: \_\_\_\_\_

Affix  
Corporate  
Seal

\_\_\_\_\_  
Attorney-in-Fact

STATE OF UTAH            )  
COUNTY OF SALT LAKE    )

\_\_\_\_\_, being first duly sworn on oath, deposes and says that he/she is the Attorney-in-Fact of the above-named Surety Company, and that he/she is duly authorized to execute the same and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

My commission expires \_\_\_\_\_.

\_\_\_\_\_  
Attorney-in-Fact

## Bidder's Proposed Subcontractors, Suppliers & Vendors List

**BONANZA PROJECT  
RECLAMATION CONSTRUCTION  
AMR/047/904  
Utah Division of Oil, Gas & Mining**

We submit the following list of first-tier subcontractors, suppliers and vendors for OWNER approval. We recognize this list as binding on us, and acknowledge OWNER'S right to reject any or all subcontractors, suppliers or vendors listed or unlisted which the OWNER feels are unqualified to do the work.

| SUBCONTRACTOR                   | CONTRACT<br>AMOUNT | STATE<br>CONTRACTOR'S<br>LICENSE NO | LICENSE<br>LIMIT |
|---------------------------------|--------------------|-------------------------------------|------------------|
| Excavation:                     |                    |                                     |                  |
| Concrete Fabrication:           |                    |                                     |                  |
| Masonry:                        |                    |                                     |                  |
| Demolition:                     |                    |                                     |                  |
| Steel Fabrication:              |                    |                                     |                  |
| Revegetation:                   |                    |                                     |                  |
| Trucking/Transport:             |                    |                                     |                  |
| Polyurethane Foam Installation: |                    |                                     |                  |
| Other:                          |                    |                                     |                  |
| Other:                          |                    |                                     |                  |
| Other:                          |                    |                                     |                  |

**BIDDER'S PROPOSED SUBCONTRACTORS, SUPPLIERS & VENDORS LIST**

Page 2

| SUPPLIER/VENDOR             | AMOUNT | PRODUCT |
|-----------------------------|--------|---------|
| Ready-Mix:                  |        |         |
| Cement/Block:               |        |         |
| Steel:                      |        |         |
| Polyurethane Foam Supplies: |        |         |
| Seed:                       |        |         |
| Other:                      |        |         |
| Other:                      |        |         |

We certify that:

1. This list includes all subcontractors, suppliers and vendors whose bids exceed \$5,000 (for prime contractor bids less than \$250,000) or \$25,000 (for prime contractor bids of \$250,000 or more).
2. Where we have listed "Self" it is our intent to perform said work and that we generally and regularly perform that type of work, and are appropriately licensed.
3. Any approved change in sub-bidders, suppliers or vendors which results in a lower contract price for sub-bid work shall accordingly reduce the total sum of the prime contract.

Signed by: \_\_\_\_\_

Title: \_\_\_\_\_

Firm: \_\_\_\_\_

Date: \_\_\_\_\_

**Note:** Failure to submit this form properly completed and signed within 24 hours (not including Saturday, Sunday, or State holidays) of the bid opening may be grounds for OWNER'S refusal to enter into a written CONTRACT with BIDDER. Action will be taken against BIDDER'S bid bond or cashier's check as deemed appropriate by OWNER. Timely notice of unacceptable subcontractors, suppliers or vendors will be given to the BIDDER. Reporting of subcontractors may be required for conformance with 63A-5-208 UCA.

## Minority And Woman Business Enterprise Representation

The offeror represents that it ☐ is ☐ is not a minority business enterprise.

A minority business enterprise is defined as a concern that:

- 1) is at least 51 percent owned by one or more individuals who are socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock owned by one or more individuals who are socially and economically disadvantaged individuals; and
- 2) has its management and daily business controlled by one or more such individuals.

Qualified groups. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic American, Native Americans, Asian-Pacific American, Asian-Indian Americans, and other individuals found to be qualified by the Small Business Administration under 13 CFR 124.1.

The offeror represents that it ☐ is ☐ is not a woman business enterprise.

A woman business enterprise is defined as a concern that:

- 1) is at least 51 percent owned by one or more women, or a publicly owned business having at least 51 percent of its stock owned by one or more women; and
- 2) has its management and daily business controlled by one or more of the women owners.

Business firms that are 51 percent owned by minorities or women, but are in fact managed and operated by non-minority individuals do not qualify as minority or woman business enterprises.

The offeror represents that the following proposed subcontractor(s) is (are) a minority or woman business enterprise:

---

---

Signature of Offeror:

---

Title:

---

Firm:

---

Date:

---

*This information is requested for Federal reporting purposes only. Minority/woman status has no bearing on the selection of a contractor.*

## **Applicant/Violator System Eligibility Check**

Federal regulations (30 CFR 874.16) effective July 1, 1994, require all successful bidders on contracts funded through Title IV of the Surface Mining Control and Reclamation Act (SMCRA) of 1977 to be eligible under 30 CFR 773.15(b)(1) to receive a permit to conduct surface coal mining operations. In general, this means that the Utah Abandoned Mine Reclamation Program may not hire a contractor who is or whose company is associated with a coal mine operator with outstanding unabated violations under SMCRA. The regulations further require that contractor eligibility be confirmed by the Applicant/Violator System (AVS) at the U.S. Office of Surface Mining (OSM). Compliance checks are also required for all subcontractors receiving 10% or more of the total contract amount.

To comply with these rules, prospective bidders must provide the Division of Oil, Gas and Mining with information on the ownership and control of the firm for AVS review. A bidder must receive a recommendation of "Issue" or "Conditional Issue" from the OSM AVS office to be awarded the contract.

The two apparent low bidders shall submit to DOGM within 24 hours (excluding weekends and holidays) of the bid opening either a notarized copy of the "AML Contractor Ownership and Control Information Package" or else a copy of the "AML Contractor Ownership and Control Data Certification" updating and certifying previously submitted information. DOGM will provide forms for these submissions or you may download from the Internet at <http://www.avs.osmre.gov>. DOGM will submit the ownership and control information to OSM for AVS review. OSM's review will be completed within 72 hours if the ownership and control data entry is complete.

Bidders may choose to submit the required information prior to submitting the bid proposal in order to facilitate data entry by OSM and expedite the AVS review and contract award process. Forms may be obtained from DOGM.

The following information is required for the "AML Contractor Ownership and Control Information Package":

- Contractor's identity (name, address, telephone, Social Security number, Employee ID number).
- Contractor's legal structure (sole proprietorship, partnership, corporation).
- Identities (name, address, telephone, SSN, EIN, % ownership) of every officer, general partner, shareholder (\$10% voting stock), director, or other controlling entity.
- Identities of parties with the authority to commit the assets of the firm.
- Identities of other relationships that give direct or indirect authority over the execution of the work.
- List (name, address, permit number, MSHA number) of all permits issued in the last five years to or pending permit applications for coal mining operations by any parties identified above.
- All of the above information for any subcontractor with \$10% of the contract amount.

## Bonanza Project Summary Bid Schedule

| <u>Bid Item</u>                                         | <u>Lump Sum Amount</u> |
|---------------------------------------------------------|------------------------|
| RECLAMATION CONSTRUCTION                                |                        |
| SITE GROUP 1 – T09S, R21E AREA (PRIMARY BID)            | \$ _____               |
| SITE GROUP 2 – T10S, R21E AREA (PRIMARY BID)            | \$ _____               |
| CONTINGENCY BID – (CROWN PILLAR)                        | \$ _____               |
| RECLAMATION CONSTRUCTION SUBTOTAL<br>(Add Totals above) | \$ _____               |
| MOBILIZATION/DEMOBILIZATION                             | \$ _____               |
| INSURANCE                                               | \$ _____               |
| BONDS <i>(see note below)</i>                           | \$ _____               |
| Variation in Contract Bond Rate: _____ %                |                        |
| TOTAL CONTRACT BID PRICE                                | \$ _____               |

TOTAL CONTRACT BID PRICE WRITTEN:

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Signed by: \_\_\_\_\_

Title: \_\_\_\_\_

Firm: \_\_\_\_\_

Date: \_\_\_\_\_

By the above signature I/we acknowledge that I/we have examined the site conditions and have made the measurements and evaluations necessary to plan and bid the WORK.

### Notes:

The "Variation in Quantity Unit Price" on the Bid Schedule will be used for adjustments to the CONTRACT amount where the actual WORK quantity varies by more than 15% from the estimated quantity listed in the Bid Schedule (see Supplemental General Condition No. 6: Variation in Estimated Quantities). The "Variation in Quantity Unit Price" will also be used as the basis for determining costs for tasks not currently specified in the WORK that may be added in the future by change order.

The "Variation in Contract Bond Rate" will be used to adjust the Lump Sum Amount for bonds when the CONTRACT amount changes (see Section 0200, Part 5.01.D).

Award of CONTRACT will be based on consideration of both the base "Bid Price" and the "Variation in Quantity Unit Price" for additional/reduced WORK.

## Bananza Project Bid Schedule

### SITE GROUP 1 - T09S, R21E

| Reclamation Action<br>Item<br>Site No. and Name         | Specification<br>Section | Feature<br>Description | Estimated<br>Quantity | Lump Sum<br>Amount(\$) | Variation in<br>Quantity<br>Unit Price<br>(\$/Unit) |
|---------------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-----------------------------------------------------|
| <b>1. Site Access &amp; Improvements</b>                | <b>0230</b>              | Sites                  | 5                     | \$_____                | n/a                                                 |
| <b>2. Mine Closure</b>                                  | <b>0250</b>              |                        |                       |                        |                                                     |
| <b>a) PUF Backfill</b>                                  |                          |                        |                       |                        |                                                     |
|                                                         |                          | 4092132 VO001          | 12 cyds               | \$_____                | \$_____/cyd                                         |
|                                                         |                          | 4092132 VO002          | 6.2 cyds              | \$_____                | \$_____/cyd                                         |
|                                                         |                          | 4092132 VO003          | 11 cyds               | \$_____                | \$_____/cyd                                         |
|                                                         |                          | 4092132 VO004          | 1.6 cyds              | \$_____                | \$_____/cyd                                         |
|                                                         |                          | 4092132 VO005          | 15 cyds               | \$_____                | \$_____/cyd                                         |
| <b>b) Crown Pillar Probe</b>                            |                          |                        |                       |                        |                                                     |
|                                                         |                          | VO005 – VO003          | 61-DH <sup>1</sup>    | \$_____                | \$_____/DH                                          |
| <b>3. Revegetation</b>                                  | <b>0290</b>              |                        |                       |                        |                                                     |
| <b>a) Seed Mixture</b>                                  |                          |                        |                       |                        |                                                     |
|                                                         |                          | 4092132 VO001          | 0.1 acre              | \$_____                | \$_____/acre                                        |
|                                                         |                          | 4092132 VO002          | 0.1 acre              | \$_____                | \$_____/acre                                        |
|                                                         |                          | 4092132 VO003          | 0.1 acre              | \$_____                | \$_____/acre                                        |
|                                                         |                          | 4092132 VO004          | 0.1 acre              | \$_____                | \$_____/acre                                        |
|                                                         |                          | 4092132 VO005          | 0.1 acre              | \$_____                | \$_____/acre                                        |
|                                                         |                          | VO005 - VO003          | 1.0 acre              | \$_____                | \$_____/acre                                        |
| <b>Total Bid for Site Group 1 - T9S, R21E (5 sites)</b> |                          |                        |                       | <b>\$</b>              |                                                     |
| <b>(Carry over to Summary Bid Sheet)</b>                |                          |                        |                       |                        |                                                     |

<sup>1</sup> DH = Drill Hole (15' Minimum Length). Note...Contractor to bid either DH or BHD, but not both.

## BONANZA PROJECT

### SITE GROUP 2 - T10S, R21E

| Reclamation Action<br>Item<br>Site No. and Name | Specification<br>Section | Feature<br>Description | Estimated<br>Quantity | Lump Sum<br>Amount(\$) | Variation in<br>Quantity<br>Unit Price<br>(\$/Unit) |
|-------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-----------------------------------------------------|
| <b>1. Site Access &amp; Improvements</b>        | <b>0230</b>              | Sites                  | 9                     | \$_____                | n/a                                                 |
| <b>2. Mine Closure</b>                          | <b>0250</b>              |                        |                       |                        |                                                     |
| <b>a) Backfill</b>                              |                          |                        |                       |                        |                                                     |
|                                                 |                          | 4102129 VO001          | 85 cyds               | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO002          | 45 cyds               | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO003          | 385 cyds              | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO004          | 87 cyds               | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO005          | 120 cyds              | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO006          | 19 cyds               | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102129 VO007          | 135 cyds              | \$_____                | \$_____/cyd                                         |
|                                                 |                          | 4102132 VO002          | 39 cyds               | \$_____                | \$_____/cyd                                         |
| <b>b) PUF Backfill</b>                          |                          |                        |                       |                        |                                                     |
|                                                 |                          | 4102132 VO001          | 11.8 cyds             | \$_____                | \$_____/cyd                                         |
| <b>c) Crown Pillar Probe</b>                    |                          |                        |                       |                        |                                                     |
|                                                 |                          | VO001 – VO002<br>or    | 9-DH                  | \$_____                | \$_____/DH                                          |
|                                                 |                          | VO001 - VO002          | 2-BHD <sup>2</sup>    | \$_____                | \$_____/BHD                                         |
|                                                 |                          | VO003 – VO004<br>or    | 18-DH                 | \$_____                | \$_____/DH                                          |
|                                                 |                          | VO003 - VO004          | 5-BHD                 | \$_____                | \$_____/BHD                                         |
|                                                 |                          | VO003 – VO001<br>or    | 4-DH                  | \$_____                | \$_____/DH                                          |
|                                                 |                          | VO003 - VO001          | 1-BHD                 | \$_____                | \$_____/BHD                                         |
|                                                 |                          | VO004 – VO005<br>or    | 11-DH                 | \$_____                | \$_____/DH                                          |
|                                                 |                          | VO004 - VO005          | 3-BHD                 | \$_____                | \$_____/BHD                                         |

<sup>2</sup> BHD = Backhoe Dig (Minimum One Bucket Width)

| Reclamation Action<br>Item<br>Site No. and Name | Specification<br>Section | Feature<br>Description | Estimated<br>Quantity | Lump Sum<br>Amount(\$) | Quantity<br>Unit Price<br>(\$/Unit) |
|-------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-------------------------------------|
|-------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-------------------------------------|

|  |  |                          |  |         |             |
|--|--|--------------------------|--|---------|-------------|
|  |  | VO005 – West 40 Ft 3-DH  |  | \$_____ | \$_____/DH  |
|  |  | or                       |  |         |             |
|  |  | VO005 – West 40 Ft 1-BHD |  | \$_____ | \$_____/BHD |

### 3. Revegetation

**0290**

#### a) Seed Mixture

|                  |          |         |              |
|------------------|----------|---------|--------------|
| 4102129 VO001    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO002    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO003    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO004    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO005    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO006    | 0.1 acre | \$_____ | \$_____/acre |
| 4102129 VO007    | 0.1 acre | \$_____ | \$_____/acre |
| 4102132 VO001    | 0.1 acre | \$_____ | \$_____/acre |
| 4102132 VO002    | 0.1 acre | \$_____ | \$_____/acre |
| VO001 – VO002    | 0.1 acre | \$_____ | \$_____/acre |
| VO003 – VO004    | 0.1 acre | \$_____ | \$_____/acre |
| VO003 – VO001    | 0.1 acre | \$_____ | \$_____/acre |
| VO004 – VO005    | 0.1 acre | \$_____ | \$_____/acre |
| VO005–West 40 Ft | 0.1 acre | \$_____ | \$_____/acre |

**Total Bid for Site Group 2 - T10S, R21E (9 sites)**

**\$**

**(Carry over to Summary Bid Sheet)**

Note: Award of CONTRACT will be based on consideration of both the base "Bid Price" and the "Variation in Quantity Unit Price" for additional/reduced WORK

## BONANZA PROJECT

### Contingency Bid Crown Pillar Removal and Site Backfill

| Reclamation Action<br>Item<br>Site No. and Name | Specification<br>Section | Feature<br>Description | Estimated<br>Quantity | Lump Sum<br>Amount(\$) | Variation in<br>Quantity<br>Unit Price<br>(\$/Unit) |
|-------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-----------------------------------------------------|
|-------------------------------------------------|--------------------------|------------------------|-----------------------|------------------------|-----------------------------------------------------|

#### 1. Crown Pillar Excavation 0255

##### a) Excavation/Backfill

##### SITE GROUP 1 - T9S, R21E

|             |           |         |             |
|-------------|-----------|---------|-------------|
| VO001-VO002 | 21 cyds   | \$_____ | \$_____/cyd |
| VO002-VO004 | 14.8 cyds | \$_____ | \$_____/cyd |
| VO004-VO003 | 37 cyds   | \$_____ | \$_____/cyd |
| VO005-VO001 | 61 cyds   | \$_____ | \$_____/cyd |

##### SITE GROUP 2 - T10S, R21E

|                  |            |         |             |
|------------------|------------|---------|-------------|
| VO001-VO002      | 575 cyds   | \$_____ | \$_____/cyd |
| VO003-VO004      | 1,100 cyds | \$_____ | \$_____/cyd |
| VO003-VO001      | 385 cyds   | \$_____ | \$_____/cyd |
| VO004-VO005      | 1,290 cyds | \$_____ | \$_____/cyd |
| VO005-West 40 Ft | 308 cyds   | \$_____ | \$_____/cyd |

#### 2. Revegetation 0290

##### a) Seed Mixture

##### SITE GROUP 1 - T9S, R21E

|             |          |         |              |
|-------------|----------|---------|--------------|
| VO001-VO002 | 0.1 acre | \$_____ | \$_____/acre |
| VO002-VO004 | 0.1 acre | \$_____ | \$_____/acre |
| VO004-VO003 | 0.1 acre | \$_____ | \$_____/acre |
| VO005-VO001 | 0.1 acre | \$_____ | \$_____/acre |
| VO001-VO002 | 0.3 acre | \$_____ | \$_____/acre |
| VO003-VO004 | 0.5 acre | \$_____ | \$_____/acre |
| VO003-VO001 | 0.3 acre | \$_____ | \$_____/acre |

| Reclamation Action<br>Item | Specification | Feature     | Estimated | Lump Sum   | Quantity                |
|----------------------------|---------------|-------------|-----------|------------|-------------------------|
| Site No. and Name          | Section       | Description | Quantity  | Amount(\$) | Unit Price<br>(\$/Unit) |

SITE GROUP 2 - T10S, R21E

VO004-VO005 0.5 acre \$\_\_\_\_\_ \$\_\_\_\_\_/acre

VO005-West 40 Ft 0.3 acre \$\_\_\_\_\_ \$\_\_\_\_\_/acre

**Total Bid for Contingency (9 sites)**

**\$**

**(Carry over to Summary Bid Sheet)**

Note: Award of CONTRACT will be based on consideration of both the base "Bid Price" and the "Variation in Quantity Unit Price" for additional/reduced WORK

## Contract Form

Contract # \_\_\_\_\_

### STATE OF UTAH CONTRACT

1. CONTRACTING PARTIES: This contract is between the following agency of the State of Utah: Department: Natural Resources Agency Code: 560 Division: Oil, Gas and Mining, referred to as OWNER, and the following CONTRACTOR:

Name \_\_\_\_\_

Address \_\_\_\_\_

City State Zip \_\_\_\_\_

Contact Person \_\_\_\_\_

Phone # (000) 000-0000 Email \_\_\_\_\_

Federal Tax ID# \_\_\_\_\_ Vendor # \_\_\_\_\_ Commodity Code # 96273

#### LEGAL STATUS OF CONTRACTOR

- ☐ Sole Proprietor  
☐ Non-Profit Corporation  
☐ For-Profit Corporation  
☐ Partnership  
☐ Government Agency

FI-NET Accounting Codes: Bonanza Project

| Fund | Agency | Org  | Approp. Unit | Activity (Mine) | Grant Category | Project or Job |
|------|--------|------|--------------|-----------------|----------------|----------------|
| 100  | 560    | 2881 | REG          |                 | GSP0           | NA 000 01 G    |

2. GENERAL PURPOSE OF CONTRACT: The general purpose of this contract is for reclamation construction of abandoned mine sites in [Countyname] County, Utah, referred to as the [Projectname] Project.
3. PROCUREMENT: This contract is entered into as a result of the procurement process on Requisition # RX 560 620000000000, FY \*\*\*\*, Bid # XX\*\*\*\*, or a pre-approved sole source authorization (from the Division of Purchasing) #: SS N/A.
4. CONTRACT PERIOD: Effective date \*\*\*MONTH DAY, YEAR. Termination date \*\*\*MONTH DAY, YEAR unless terminated early or extended in accordance with the terms and conditions of this contract. Renewal options (if any): \*\*\*.
5. CONTRACT COSTS: CONTRACTOR will be paid a maximum of \$ \*\*\* for costs authorized by this contract. Additional information regarding costs: see Attachment D.
6. ATTACHMENT A: Division of Purchasing's Standard Terms and Conditions.

ATTACHMENT B: SCOPE OF WORK, hereinafter the WORK, to be performed is that contained in the Drawings and Technical Specifications prepared by: the Division of Oil, Gas & Mining and entitled *TECHNICAL SPECIFICATIONS: [Projectname] Project Reclamation Construction*; the General Specifications prepared by the Division of Oil, Gas and Mining entitled *GENERAL CONDITIONS FOR ABANDONED MINE RECLAMATION PROJECTS*, dated June, 1988; and the Supplemental General Conditions listed in the Technical Specifications cited above.

ATTACHMENT C: Division of Oil, Gas and Mining Construction Terms and Conditions.

ATTACHMENT D: Cost Schedule

**Any conflicts between Attachment A and other Attachments will be resolved in favor of Attachment A.**

7. DOCUMENTS INCORPORATED INTO THIS CONTRACT BY REFERENCE BUT NOT ATTACHED:

- a. All other governmental laws, regulations, or actions applicable to the goods and/or services authorized by this contract.
- b. Utah State Procurement Code, Procurement Rules, and CONTRACTOR'S response to Bid # XX\*\*\*\* , dated \*\*\*MONTH DAY, YEAR.

IN WITNESS WHEREOF, the parties sign and cause this contract to be executed.

**FOR THE CONTRACTOR:**

ATTEST:

CONTRACTOR:

\_\_\_\_\_  
Secretary of Corporation                      Date  
or Witness

\_\_\_\_\_  
Signature                                              Date

\_\_\_\_\_  
Type or Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Taxpayer ID #

**FOR THE STATE OF UTAH:**

APPROVED FOR AVAILABILITY OF FUNDS:  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS & MINING

\_\_\_\_\_  
Mark R. Mesch                                              Date  
AMRP Administrator

\_\_\_\_\_  
John R. Baza                                              Date  
Director, DOGM

\_\_\_\_\_  
Paula Dupin-Zahn                                              Date  
DOGM Budget/Accounting

APPROVED FOR EXPENDITURE:  
DIVISION OF PURCHASING

DIVISION OF FINANCE

\_\_\_\_\_  
Douglas G. Richins                                              Date  
Director of Purchasing

\_\_\_\_\_  
(for) John Reidhead                                              Date  
Director of Finance

|                       |                  |                |              |
|-----------------------|------------------|----------------|--------------|
| [Projectmanager]      | (801) 538-****   | (801) 359-3940 | ***@utah.gov |
| Agency Contact Person | Telephone Number | Fax Number     | Email        |

APPROVED AS TO FORM BY  
ATTORNEY GENERAL'S OFFICE  
DOGM Construction Contract (revised 01/11/06)  
Reference: Division of Finance Contract Form (revised 09/30/03)

ATTACHMENT A  
DIVISION OF PURCHASING  
STATE OF UTAH STANDARD TERMS AND CONDITIONS

1. AUTHORITY: Provisions of this contract are pursuant to the authority set forth in 63-56, Utah Code Annotated, 1953, as amended, Utah State Procurement Rules (Utah Administrative Code Section R33), and related statutes which permit the State to purchase certain specified services, and other approved purchases for the State.

2. CONTRACT JURISDICTION, CHOICE OF LAW, AND VENUE: The provisions of this contract shall be governed by the laws of the State of Utah. The parties will submit to the jurisdiction of the courts of the State of Utah for any dispute arising out of this Contract or the breach thereof. Venue shall be in Salt Lake City, in the Third Judicial District Court for Salt Lake County.

3. LAWS AND REGULATIONS: Any and all supplies, services and equipment furnished will comply fully with all applicable Federal and State laws and regulations.

4. RECORDS ADMINISTRATION: The CONTRACTOR shall maintain, or supervise the maintenance of all records necessary to properly account for the payments made to the CONTRACTOR for costs authorized by this contract. These records shall be retained by the CONTRACTOR for at least four years after the contract terminates, or until all audits initiated within the four years, have been completed, whichever is later. The CONTRACTOR agrees to allow State and Federal auditors, and State Agency Staff, access to all the records to this contract, for audit and inspection, and monitoring of services. Such access will be during normal business hours, or by appointment.

5. CONFLICT OF INTEREST: CONTRACTOR represents that none of its officers or employees are officers or employees of the State of Utah, unless disclosure has been made in accordance with 67-16-8, Utah Code Annotated, 1953, as amended.

6. CONTRACTOR, AN INDEPENDENT CONTRACTOR: The CONTRACTOR shall be an independent contractor, and as such, shall have no authorization, express or implied, to bind the State to any agreements, settlements, liability, or understanding whatsoever, and agrees not to perform any acts as agent for the State, except as herein expressly set forth. Compensation stated herein shall be the total amount payable to the CONTRACTOR by the State. The CONTRACTOR shall be responsible for the payment of all income tax and social security amounts due as a result of payments received from the State for these contract services. Persons employed by the State and acting under the direction of the State shall not be deemed to be employees or agents of the CONTRACTOR.

7. INDEMNITY CLAUSE: The CONTRACTOR agrees to indemnify, save harmless, and release the State of Utah, and all its officers, agents, volunteers, and employees from and against any and all loss, damages, injury, liability, suits, and proceedings arising out of the performance of this contract which are caused in whole or in part by the negligence of the CONTRACTOR's officers, agents, volunteers, or employees, but not for claims arising from the State's sole negligence.

8. EQUAL OPPORTUNITY CLAUSE: The CONTRACTOR agrees to abide by the provisions of Title VI and VII of the Civil Rights Act of 1964 (42USC 2000e) which prohibits discrimination against any employee or applicant for employment or any applicant or recipient of services, on the basis of race, religion, color, or national origin; and further agrees to abide by Executive Order No. 11246, as amended, which prohibits discrimination on the basis of sex; 45 CFR 90 which prohibits discrimination on the basis of age; and Section 504 of the Rehabilitation Act of 1973, or the Americans with Disabilities Act of 1990 which prohibits discrimination on the basis of disabilities. Also, the CONTRACTOR agrees to abide by Utah's Executive Order, dated March 17, 1993, which prohibits sexual harassment in the work place.

9. SEPARABILITY CLAUSE: A declaration by any court, or any other binding legal source, that any provision of this contract is illegal and void shall not affect the legality and enforceability of any other provision of this contract, unless the provisions are mutually dependent.

10. RENEGOTIATION OR MODIFICATIONS: This contract may be amended, modified, or supplemented only by written amendment to the contract, executed by the same persons or by persons holding the same position as persons who signed the original agreement on behalf of the parties hereto, and attached to the original signed copy of the contract.

11. DEBARMENT: The CONTRACTOR certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (contract), by any governmental department or agency. If the CONTRACTOR cannot certify this statement, attach a written explanation for review by the State. The CONTRACTOR must notify the State Director of Purchasing within 30 days if debarred by any governmental entity during the Contract period.

12. TERMINATION: Unless otherwise stated in the Special Terms and Conditions, this contract may be terminated, with cause by either party, in advance of the specified termination date, upon written notice being given by the other party. The party in violation will be given ten (10) working days after notification to correct and cease the violations, after which the contract may be terminated for cause. This contract may be terminated without cause, in advance of the specified expiration date, by either party, upon 90 days prior written notice being given the other party. On termination of this contract, all accounts and payments will be processed according to the financial arrangements set forth herein for approved services rendered to date of termination.

13. NONAPPROPRIATION OF FUNDS: The CONTRACTOR acknowledges that the State cannot contract for the payment of funds not yet appropriated by the Utah State Legislature. If funding to the State is reduced due to an order by the Legislature or the Governor, or is required by State law, or if federal funding (when applicable) is not provided, the State may terminate this contract or proportionately reduce the services and purchase obligations and the amount due from the State upon 30 days written notice. In the case that funds are not appropriated or are reduced, the State will reimburse CONTRACTOR for products delivered or services performed through the date of cancellation or reduction, and the State will not be liable for any future commitments, penalties, or liquidated damages.

14. SALES TAX EXEMPTION: The State of Utah's sales and use tax exemption number is E33399. The tangible personal property or services being purchased are being paid from State funds and used in the exercise of that entity's essential functions. If the items being purchased are construction materials, they will be converted into real property by employees of this government entity, unless otherwise stated in the contract.

15. WARRANTY: The CONTRACTOR agrees to warrant and assume responsibility for all products (including hardware, firmware, and/or software products) that it licenses, contracts, or sells to the State of Utah under this contract for a period of one year, unless otherwise specified and mutually agreed upon elsewhere in this contract. The CONTRACTOR (seller) acknowledges that all warranties granted to the buyer by the Uniform Commercial Code of the State of Utah apply to this contract. Product liability disclaimers and/or warranty disclaimers from the seller are not applicable to this contract unless otherwise specified and mutually agreed upon elsewhere in this contract. In general, the CONTRACTOR warrants that: (1) the product will do what the salesperson said it would do, (2) the product will live up to all specific claims that the manufacturer makes in their advertisements, (3) the product will be suitable for the ordinary purposes for which such product is used, (4) the product will be suitable for any special purposes that the State has relied on the CONTRACTOR's skill or judgment to consider when it advised the State about the product, (5) the product has been properly designed and manufactured, and (6) the product is free of significant defects or unusual problems about which the State has not been warned. Remedies available to the State include the following: The CONTRACTOR will repair or replace (at no charge to the State) the product whose nonconformance is discovered and made known to the CONTRACTOR in writing. If the repaired and/or replaced product proves to be inadequate, or fails of its essential purpose, the CONTRACTOR will refund the full amount of any payments that have been made. Nothing in this warranty will be construed to limit any rights or remedies the State of Utah may otherwise have under this contract.

16. PUBLIC INFORMATION: CONTRACTOR agrees that the contract will be a public document, and may be available for distribution. CONTRACTOR gives the State express permission to make copies of the contract and/or of the response to the solicitation in accordance with the State of Utah Government Records Access and Management Act. The permission to make copies as noted will take precedence over any statements of confidentiality, proprietary information, copyright information, or similar notation.

17. DELIVERY: Unless otherwise specified in this contract, all deliveries will be F.O.B. destination with all transportation and handling charges paid by the CONTRACTOR. Responsibility and liability for loss or damage will remain with CONTRACTOR until final inspection and acceptance when responsibility will pass to the State except as to latent defects, fraud and CONTRACTOR's warranty obligations.

18. ORDERING AND INVOICING: All orders will be shipped promptly in accordance with the delivery schedule. The CONTRACTOR will promptly submit invoices (within 30 days of shipment or delivery of services) to the State. The State contract number and/or the agency purchase order number shall be listed on all invoices, freight tickets, and correspondence relating to the contract order. The prices paid by the State will be those prices listed in the contract. The State has the right to adjust or return any invoice reflecting incorrect pricing.

19. PAYMENT: Payments are normally made within 30 days following the date the order is delivered or the date a correct invoice is received, whichever is later. All payments to the CONTRACTOR will be remitted by mail unless paid by the State of Utah's Purchasing Card (major credit card).

20. PATENTS, COPYRIGHTS, ETC.: The CONTRACTOR will release, indemnify and hold the State, its officers, agents and employees harmless from liability of any kind or nature, including the CONTRACTOR's use of any copyrighted or un-copyrighted composition, secret process, patented or un-patented invention, article or appliance furnished or used in the performance of this contract.

21. ASSIGNMENT/SUBCONTRACT: CONTRACTOR will not assign, sell, transfer, subcontract or sublet rights, or delegate responsibilities under this contract, in whole or in part, without the prior written approval of the State.

22. DEFAULT AND REMEDIES: Any of the following events will constitute cause for the State to declare CONTRACTOR in default of the contract: 1. Nonperformance of contractual requirements; 2. A material breach of any term or condition of this contract. The State will issue a written notice of default providing a ten (10) day period in which CONTRACTOR will have an opportunity to cure. Time allowed for cure will not diminish or eliminate CONTRACTOR's liability for damages. If the default remains, after CONTRACTOR has been provided the opportunity to cure, the State may do one or more of the following: 1. Exercise any remedy provided by law; 2. Terminate this contract and any related contracts or portions thereof; 3. Impose liquidated damages, if liquidated damages are listed in the contract; 4. Suspend CONTRACTOR from receiving future solicitations.

23. FORCE MAJEURE: Neither party to this contract will be held responsible for delay or default caused by fire, riot, acts of God and/or war which is beyond that party's reasonable control. The State may terminate this contract after determining such delay or default will reasonably prevent successful performance of the contract.

24. PROCUREMENT ETHICS: The CONTRACTOR understands that a person who is interested in any way in the sale of any supplies, services, construction, or insurance to the State of Utah is violating the law if the person gives or offers to give any compensation, gratuity, contribution, loan or reward, or any promise thereof to any person acting as a procurement officer on behalf of the State, or who in any official capacity participates in the procurement of such supplies, services, construction, or insurance, whether it is given for their own use or for the use or benefit of any other person or organization (63-56-1002, Utah Code Annotated, 1953, as amended).

25. CONFLICT OF TERMS: CONTRACTOR Terms and Conditions that apply must be in writing and attached to the contract. No other Terms and Conditions will apply to this contract including terms listed or referenced on a CONTRACTOR's website, terms listed in a CONTRACTOR quotation/sales order, etc. In the event of any conflict in the contract terms and conditions, the order of precedence shall be: 1. State Standard Terms and Conditions; 2. State Additional Terms and Conditions; 3. CONTRACTOR Terms and Conditions.

DOGM Standard Terms and Conditions (revised 01/11/06)

Reference: Division of Purchasing Standard Terms and Conditions (revised 07/05/05)

End Attachment A

ATTACHMENT B  
SCOPE OF WORK

SCOPE OF WORK, hereinafter the WORK, to be performed is that contained in the Drawings and Technical Specifications prepared by: the Division of Oil, Gas & Mining and entitled *TECHNICAL SPECIFICATIONS: Bonanza Project Reclamation Construction*; the General Specifications prepared by the Division of Oil, Gas and Mining entitled *GENERAL CONDITIONS FOR ABANDONED MINE RECLAMATION PROJECTS*, dated June 1988; and the Supplemental General Conditions listed in the Technical Specifications cited above.

The CONTRACTOR agrees to furnish all labor, materials and equipment to complete the WORK as described the Drawings, Specifications, and addenda to the specifications which are hereby made a part of this CONTRACT by reference. It is understood and agreed by the parties hereto that all WORK will be performed as required in the Drawings and Specifications and will be subject to inspection and approval prior to final acceptance by the OWNER. The relationship of the CONTRACTOR to the OWNER hereunder is that of an independent CONTRACTOR.

End Attachment B

ATTACHMENT C  
DIVISION OF OIL, GAS AND MINING  
CONSTRUCTION TERMS AND CONDITIONS

ARTICLE 1. TIME OF COMPLETION: The WORK under this CONTRACT shall be commenced upon notice to proceed and shall be completed within 45 calendar days after date marked on registered receipt of said Notice to Proceed and no later than June 30, 2006. WORK delays caused by weather may, at the discretion of the OWNER, extend the completion date. CONTRACTOR also agrees to the liquidated damages provisions of Article 12.

ARTICLE 2. PAYMENT: OWNER will promptly pay for services performed by the CONTRACTOR. Vouchers for reimbursement of expenditures under this Agreement must be filed promptly with OWNER's Representative by the tenth day of the month following the month in which WORK has been performed. OWNER will withhold from payment an amount not to exceed 10% of the total CONTRACT cost, except for Mobilization, which will have 40% withheld, until all WORK has been performed by the CONTRACTOR and is approved and accepted by OWNER.

ARTICLE 3. INDEBTEDNESS: Before final payment is made, the CONTRACTOR must submit evidence including lien waivers, satisfactory to the OWNER that all payrolls, materials bills, subcontracts and outstanding indebtedness in connection with the WORK have been paid or that arrangements have been made for their payment. Payment will be made without unnecessary delay after receipt of such evidence as mentioned above and Final Acceptance of the WORK by the OWNER.

ARTICLE 4. ADDITIONAL WORK: It is understood and agreed by the parties hereto that no money will be paid to the CONTRACTOR for any additional WORK, labor or materials furnished unless a new CONTRACT in the form of a Change Order or a modification hereof for such additional materials or labor has been executed by OWNER and CONTRACTOR. The OWNER specifically reserves the right to modify or amend this CONTRACT and the total sum due hereunder either by enlarging or restricting the WORK through a change order.

ARTICLE 5. ACCEPTANCE: The WORK will be inspected for acceptance by the OWNER promptly upon receipt of notice from the CONTRACTOR that the WORK is complete and ready for inspection.

ARTICLE 6. DISPUTES PERTAINING TO PAYMENT FOR WORK: Any disputes which may arise respecting the value of any WORK done, or any WORK omitted, or of any ADDITIONAL WORK which CONTRACTOR may be required to perform, or respecting any other elements involved in this CONTRACT, will be decided by the Director of the Division of Oil, Gas & Mining, acting as the OWNER.

ARTICLE 7. TERMINATION OF CONTRACT:

a. If the CONTRACTOR is adjudged bankrupt or if the CONTRACTOR makes a general assignment for the benefit of CONTRACTOR'S creditors or if a receiver is appointed on account of CONTRACTOR'S insolvency, or if CONTRACTOR or any of his/her Subcontractors violates any of the provisions of this

CONTRACT, or if the CONTRACTOR does not perform the WORK according to the Specifications, the OWNER may serve written notice upon CONTRACTOR of its intention to terminate the CONTRACT; and unless within ten (10) days after the serving of the notice, the violation ceases, the OWNER then may take over the WORK and at the expense of the CONTRACTOR, complete it by contract or by any other method it may deem advisable. The CONTRACTOR will be liable to the OWNER for any excess cost incurred by the OWNER and the OWNER may, without liability for so doing, take possession of and utilize in completing the WORK, such materials, appliances, paint, and any other property belonging to the CONTRACTOR as may be on the site of the WORK.

b. OWNER may terminate this Agreement upon thirty days written notice to CONTRACTOR in the event the U.S. Department of the Interior fails to grant to OWNER sufficient funds to meet its obligations under this Agreement. In such event, CONTRACTOR will be entitled to receive just and equitable compensation for any satisfactory WORK completed up to the time of termination.

ARTICLE 8: OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNT AND MAKE APPLICATION THEREOF: The OWNER may withhold from payment to the CONTRACTOR an amount or amounts as, in the OWNER'S judgment, may be necessary to pay just claims against the CONTRACTOR or any Subcontractor for labor and services rendered and materials furnished in and about the WORK. The OWNER in its discretion may apply the withheld amounts on the payment of such claims. In so doing the OWNER will be deemed the agent of the CONTRACTOR and payments so made by the OWNER will be considered as a payment made under the CONTRACT by the OWNER to the CONTRACTOR and the OWNER will not be liable to the CONTRACTOR for any such payments made in good faith. Such payments may be made without prior determination of the claim or claims.

ARTICLE 9: INDEPENDENT CONTRACTOR: The CONTRACTOR will be considered an independent contractor, and, as such, has no authorization, expressed or implied, to bind the State of Utah or the OWNER to any agreement, settlement, liability or understanding whatsoever, nor to perform any acts as agent for the State of Utah, except as herein expressly set forth. The compensation provided for herein will be the total compensation payable hereunder by the State of Utah or the OWNER.

ARTICLE 10: LIABILITY AND INDEMNIFICATION: It is agreed that the CONTRACTOR will at all times protect and indemnify and save harmless, the State of Utah and all institutions, agencies, departments, authorities and instrumentalities of the State of Utah and any member of their governing bodies or of their boards or commissions or any of their elected or appointed officers or any of their employees or authorized volunteers, or the private landowners who have consented to reclamation construction and/or have consented to allow ingress or egress to a reclamation site, as described in the general conditions of the project specifications which are included herein by reference, from any and all claims, damages of every kind and nature made, rendered or incurred by or in behalf of any person or corporation whatsoever, including the parties hereto and their employees that may arise, occur or grow out of any acts, actions, work or other activity done by the CONTRACTOR in the performance and execution of this CONTRACT.

ARTICLE 11. SUBCONTRACTOR: No part of this CONTRACT may be sublet by the CONTRACTOR without the prior written approval of the OWNER. The CONTRACTOR and the OWNER for themselves, their heirs, successors, executors, and administrators, hereby agree to the full performance of the covenants herein contained.

ARTICLE 12. LIQUIDATED DAMAGES: In the event the CONTRACTOR fails to complete the WORK within the time agreed upon in CONTRACTOR's schedule as set forth in Article 2, or within such additional time as may have been allowed by the OWNER, there will be deducted from any moneys due or that may become due the CONTRACTOR the sum of \$781.00 per day for each and every calendar day beyond the agreed or extended completion day that the WORK remains uncompleted. Such sum is fixed and agreed upon by the OWNER and the CONTRACTOR as liquidated damages due the OWNER by reason of the inconvenience and added costs of administration, engineering and supervision resulting from the CONTRACTOR's default, and not as a penalty.

Permitting the CONTRACTOR to continue and finish the WORK or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, in no way operates as a waiver on the part of the OWNER of any of OWNER'S rights under the CONTRACT.

ARTICLE 13. DEFAULT: In the event of default by the CONTRACTOR, termination may be executed as described by the Termination for Default Clause of the DIVISION OF OIL, GAS AND MINING GENERAL CONDITIONS FOR ABANDONED MINE RECLAMATION PROJECTS.

ARTICLE 14. NONAPPROPRIATION OF FUNDS: Financial obligations of the OWNER payable after the current fiscal year are contingent upon funds for the purpose being appropriated, budgeted or otherwise made available. If funds are not appropriated or otherwise available to continue the payment, this contract may be terminated without penalty by giving thirty (30) days written notice.

ARTICLE 15. CERTIFICATIONS:

PART A: *Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions.* 1) The CONTRACTOR certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (contract), by any Federal department or agency. 2) Where the CONTRACTOR is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: *Certification Regarding Lobbying.* The undersigned certifies, to the best of his or her knowledge and belief, that: 1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The CONTRACTOR was selected for this contract in accordance with the State of Utah, Division of Purchasing's Regulations for the Procurement of Construction and Professional Services.

DOGM Construction Terms and Conditions (revised 09/24/03)

End Attachment C

ATTACHMENT D  
COST SCHEDULE

*The Cost Schedule will be generated from the Bid Schedule following the award of the CONTRACT.*

## Performance Bond

(Title 63, Chapter 56, U.C.A. 1953, as Amended)

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_, hereinafter referred to as the "Principal," and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, with its principal office in the City of \_\_\_\_\_, hereinafter referred to as the "Surety," are held and firmly bound unto \_\_\_\_\_, hereinafter referred to as the "Obligee," in the amount of \_\_\_\_\_ DOLLARS (\$\_\_\_\_\_) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the day of \_\_\_\_\_, 20\_\_\_\_, which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall faithfully perform the Contract in accordance with the Plans, Specifications and conditions thereof, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that this Bond is executed pursuant to the provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as Amended, and all liabilities on this Bond shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this day of \_\_\_\_\_, 20\_\_\_\_.

WITNESS OR ATTESTATION:

\_\_\_\_\_  
Principal

(Seal)

\_\_\_\_\_  
By

WITNESS:

\_\_\_\_\_  
Surety

(Seal)

\_\_\_\_\_  
By

STATE OF UTAH           )  
                                      ) SS  
COUNTY OF SALT LAKE   )

\_\_\_\_\_, being first duly sworn on oath, deposes and says that he/she is the Attorney-in-fact of the \_\_\_\_\_ and that he/she is duly authorized to execute and deliver the foregoing obligation that said company is authorized to execute the same, and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations.

Subscribed and sworn to before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My commission expires: \_\_\_\_\_

APPROVED AS TO FORM: ATTORNEY GENERAL'S OFFICE

## Payment Bond

(Title 63, Chapter 56, U. C. A. 1953, as Amended)

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_, hereinafter referred to as the "Principal," and \_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, with its principal office in the City of \_\_\_\_\_, hereinafter referred to as the "Surety," are held and firmly bound unto \_\_\_\_\_, hereinafter referred to as the "Obligee," in the amount of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_) for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the day of \_\_\_\_\_, 20\_\_\_\_, which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal shall pay all claimants supplying labor or materials to him/her or his/her subcontractors in the prosecution of the work provided for in said Contract, then, this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 63, Chapter 56, Utah Code Annotated, 1953, as amended and all liabilities on this bond to all such claimants shall be determined in accordance with said provisions to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this day of \_\_\_\_\_, 20\_\_\_\_.

WITNESS OR ATTESTATION:

\_\_\_\_\_  
Principal

(Seal)

\_\_\_\_\_  
By

WITNESS:

\_\_\_\_\_  
Surety

(Seal)

\_\_\_\_\_  
By

STATE OF UTAH )

) SS

COUNTY OF SALT LAKE )

\_\_\_\_\_, being first duly sworn on oath, deposes and says that he/she is the Attorney-in-fact of the \_\_\_\_\_ and that he/she is duly authorized to execute and deliver the foregoing obligation that said company is authorized to execute the same, and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My commission expires: \_\_\_\_\_

APPROVED AS TO FORM: ATTORNEY GENERAL'S OFFICE

# Contract Change Order

## STATE OF UTAH CONTRACT AMENDMENT

**AMENDMENT # 0 to CONTRACT # 00-0000**

TO BE ATTACHED TO AND MADE A PART OF the above numbered contract by and between the State of Utah, Division of Oil, Gas and Mining, referred to as STATE and, \_\_\_\_\_, referred to as CONTRACTOR.

**Project Name:** [Projectname]

**DOGM Project Number:** AMR/000/900

FI-NET Accounting Codes: [Projectname] Project

| Fund | Agency | Org  | Approp. Unit | Activity (Mine) | Grant Category | Project or Job |
|------|--------|------|--------------|-----------------|----------------|----------------|
| 100  | 560    | 2881 | REG          |                 | GSP0           | NA 000 01 G    |

### THE PARTIES AGREE TO AMEND THE CONTRACT AS FOLLOWS:

**1. Contract period:**

mm/dd/yyyy (original starting date)

mm/dd/yyyy (current ending date)

mm/dd/yyyy **new ending date**

**2. Contract amount:**

\$000.00 (current contract amount)

\$000.00 (amendment amount)

\$000.00 **new contract amount**  
(add current amount to amendment amount)

**3. Other Changes:** *(expand table as needed)*

| ITEM NO. | DESCRIPTION OF CHANGES IN QUANTITIES, UNIT PRICES, SCHEDULE, ETC. | INCREASE (DECREASE) |
|----------|-------------------------------------------------------------------|---------------------|
| 1.       | Description of changes in quantities, unit prices, schedule.      | \$                  |
| 2.       | Description of changes in quantities, unit prices, schedule.      | \$                  |
| 3.       | Description of changes in quantities, unit prices, schedule.      | \$                  |
| 4.       | SUBTOTAL                                                          | \$                  |
| 5.       | BONDS                                                             | \$                  |
| 6.       | TOTAL AMOUNT OF CHANGE ORDER                                      | \$                  |

**4. Effective Date of Amendment:** mm/dd/yyyy

All other conditions and terms in the original contract remain the same.

IN WITNESS WHEREOF, the parties sign and cause the amendment to be executed.

Approved by

Contract Rep:

Date: \_\_\_\_\_

Approved by

AMR Admin:

Date: \_\_\_\_\_

Accepted by

Contractor:

Date: \_\_\_\_\_

Approved by

DOGM Budget Off:

Date: \_\_\_\_\_

Approved by

DOGM Director

Date: \_\_\_\_\_

Approved by

Div'n Purchasing:

Date: \_\_\_\_\_

Approved by

Div'n of Finance:

Date: \_\_\_\_\_

DOGM Change Order Form (revised 01/11/06)

Reference: Division of Purchasing Contract Amendment Form DP-4 (revised 01/05/00)

## Certificate of Substantial Completion

### UTAH DIVISION OF OIL, GAS AND MINING

**PROJECT:** [Projectname]

**PROJECT NO.:** AMR/000/900

**CONTRACT NO.:** 00-0000

The WORK performed under the subject CONTRACT has been reviewed on this date and found to be substantially completed.

### DEFINITION OF SUBSTANTIAL COMPLETION

*The date of substantial completion of a project or specified area of a project is the date when the construction is sufficiently completed in accordance with the Contract Documents, as modified by any change orders agreed to by the parties, so that the OWNER can occupy the project or specified area of the project for the use for which it was intended.*

A list of items to be completed or corrected, prepared by the Division of Oil, Gas & Mining and verified by the OWNER, is appended hereto. This list may not be exhaustive, and the failure to include an item on it does not alter the responsibility of the CONTRACTOR to complete all the WORK in accordance with the Contract Documents, including authorized changes thereof.

Division of Oil, Gas & Mining

OWNER

\_\_\_\_\_  
CONTRACT REPRESENTATIVE

\_\_\_\_\_  
DATE

The CONTRACTOR will complete or correct the work on the list of items appended hereto within \_\_\_\_\_ days from the above date of issuance of this Certificate.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
AUTHORIZED REPRESENTATIVE

\_\_\_\_\_  
DATE

The OWNER accepts the project or specified area of the project as substantially complete and will assume full possession of the project or specified area of the project at \_\_\_\_\_ P.M. (time) on \_\_\_\_\_, 20\_\_ (date).

Division of Oil, Gas & Mining

OWNER

\_\_\_\_\_  
CONTRACT REPRESENTATIVE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
ADMINISTRATOR, AMRP

\_\_\_\_\_  
DATE

RESPONSIBILITIES AND/OR EXCEPTIONS:

This form used by permission of A.I.A.  
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

## Certificate of Final Acceptance

### UTAH DIVISION OF OIL, GAS AND MINING

**PROJECT:** [Projectname]

**PROJECT NO.:** AMR/000/900

**CONTRACT NO.:** 00-0000

The WORK performed under the subject CONTRACT has been reviewed on this date and found to be completed.

### **DEFINITION OF FINAL ACCEPTANCE**

*The date of final acceptance of a project is the date when the construction is completed in accordance with the Contract Documents, as modified by any change orders agreed to by the parties, so that the OWNER can occupy the project for the use for which it was intended.*

Items listed on the Certificate of Substantial Completion, as prepared by the Division of Oil, Gas & Mining, have been completed or corrected and verified by the OWNER as having been completed or corrected.

Division of Oil, Gas & Mining  
OWNER

\_\_\_\_\_  
INSPECTOR DATE

\_\_\_\_\_  
CONTRACT REPRESENTATIVE DATE

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
AUTHORIZED REPRESENTATIVE DATE

The OWNER accepts the project as complete and will assume full possession of the project or specified area of the project at \_\_\_\_\_ P.M. (time) on \_\_\_\_\_, 20\_\_\_\_ (date).

Division of Oil, Gas & Mining  
OWNER

\_\_\_\_\_  
ADMINISTRATOR, AMRP DATE



# **General Conditions for Abandoned Mine Reclamation Projects**

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**DIVISION OF OIL, GAS AND MINING  
GENERAL CONDITIONS FOR  
ABANDONED MINE RECLAMATION PROJECTS**

**1. Definitions:**

- A. The CONTRACT documents consist of the agreement, the general conditions of the CONTRACT, the drawings and specifications, including all modifications thereof incorporated in the documents before their execution. These form the CONTRACT.
- B. The OWNER and the CONTRACTOR or pronouns used in place thereof, are those mentioned as such in the agreement. They are treated throughout the CONTRACT documents as if each were in the singular number.
- C. The term "Subcontractor," as employed herein, includes anyone having a direct CONTRACT with anyone except the OWNER to provide material and/or labor under this CONTRACT, and it includes one who furnishes material worked to a special design according to the plans and/or specifications of this WORK, but does not include one who merely furnishes material not so worked.
- D. The word "state," or pronoun used in place thereof, is to designate the State of Utah, as represented by the Division of Oil, Gas & Mining.
- E. The word "OWNER," or pronoun used in place thereof, is to designate the State of Utah, as represented by the Division of Oil, Gas & Mining.
- F. The term "WORK" of the CONTRACTOR or subcontractor includes labor or materials or both, and the SCOPE OF WORK.
- G. The term "site" shall be used to refer to all areas where the WORK is to be performed.
- H. The term "engineer" shall be used to refer to a consultant representing the OWNER or a designated representative of the OWNER.
- I. The applicable laws and regulations of the State of Utah shall govern the execution of the WORK embodied in the contract documents.

**2. Correlation and Intent of Documents:**

The CONTRACT documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, and transportation necessary for the proper and complete execution of the WORK, and equal in quality and workmanship to the highest standards. The CONTRACTOR is to abide by and comply with the true intent and meaning of all drawings and specifications taken as a whole and is not to avail himself to the detriment of the WORK, of any manifestly unintentional error or omission, should any exist. All minor details of WORK which are not shown on the plans, as well as such items as are not specifically mentioned in the specifications but are obviously necessary for the proper completion of the WORK, shall be considered as incidental and as being part of the WORK.

**3. Copies Furnished:**

Unless otherwise provided in the CONTRACT documents, the OWNER will furnish the CONTRACTOR, free of charge to the CONTRACTOR, copies of drawings and specifications, reasonably necessary for the execution of the WORK.

**4. Dimensions:**

Where no figures or memoranda are given, the drawings shall be accurately followed according to their scale, but figures or memoranda are to be preferred to the scale, in all cases of difference, and the larger scale details shall take preference over those of smaller scale.

**5. Detail Drawings and Instructions:**

The OWNER shall furnish, with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper execution of the WORK. All such drawings and instructions shall be consistent with the CONTRACT documents, true developments thereof, and reasonably inferable therefrom. The WORK shall be executed in conformity with the drawings and instructions. Any WORK performed by the CONTRACTOR in advance of these drawings and instructions shall be entirely at the CONTRACTOR's risk.

**6. Drawings and Specifications on the Work:**

The CONTRACTOR shall keep at the jobsite one copy of all drawings and specifications on the WORK in good order, available to the OWNER and their representatives.

**7. Ownership of Drawings:**

All copies of drawings and specifications furnished the CONTRACTOR by the OWNER are the property of the OWNER. They are not to be used by the CONTRACTOR on other work, and are to be returned to the OWNER, upon request, at the completion of the WORK.

**8. Shop Drawings/As Built Drawings:**

The CONTRACTOR shall submit to the OWNER, with such promptness as to cause no delay in his/her WORK or in that of any other CONTRACTOR, six copies of all shop/as built drawings or setting drawings and schedules required for the WORK of the various trades and the OWNER shall pass upon them with reasonable promptness. The CONTRACTOR shall submit to the OWNER, with such promptness, making desired corrections. Said corrections shall pertain to conformance with the basic design concepts embodied in the CONTRACT documents. The CONTRACTOR shall make any corrections required by the OWNER. The OWNER shall distribute the corrected drawings as follows: Two drawings to the OWNER; three drawings back to the general CONTRACTOR; and one drawing to the project inspector (if one is assigned to the job). The OWNER's approval of such drawings or schedules shall not relieve the CONTRACTOR from responsibility for deviations from drawings or specifications, unless he/she has in writing called the OWNER's attention to such deviations at the time of submission, and has received the OWNER's written approval of such deviation; nor shall it relieve him/her from responsibility for errors of any sort in shop/as built drawings or schedules.

**9. Samples:**

The CONTRACTOR shall furnish to the OWNER for approval, all samples as directed. The WORK shall be in accordance with approved samples.

**10. Materials, Appliances, Employees:**

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities and services necessary for the execution and completion of the WORK.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of high quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The CONTRACTOR shall at all times enforce strict discipline and order among his/her employees, and shall not employ on the WORK any unfit person or anyone not skilled in the work assigned to him/her.

#### **11. Royalties and Patents:**

The CONTRACTOR shall pay all royalties and license fees. He/she shall defend all suits or claims for infringement of any patent rights and shall save the OWNER harmless from loss on account thereof.

#### **12. Surveys, Permits and Regulations:**

The OWNER shall furnish surveys necessary to establish site boundaries and existing topography. The OWNER shall provide those surveys necessary for laying out the WORK.

The CONTRACTOR shall give all notices and comply with all applicable laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the drawings and specifications are at variance therewith, he/she shall promptly notify the OWNER in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the WORK. If the CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the OWNER, he/she shall bear all costs arising therefrom.

Inasmuch as the WORK under this contract will be performed for the State of Utah, it will not be necessary to take out local building permits, electrical permits and plumbing permits, nor will it be necessary to pay fees for inspections pertaining thereto; however, it will be necessary to obtain a permit from the city, county, and or Department of Transportation having jurisdiction whenever the WORK involves their property. The CONTRACTOR shall cooperate as necessary with these jurisdictions to comply with all their requirements, which may include a bond and permit fee.

Fees for connection to utilities such as water and power must be borne by the CONTRACTOR.

#### **13. Protection of Work and Property:**

The CONTRACTOR shall continuously maintain adequate protection of all his/her WORK from damage and shall protect the OWNER's property from injury or loss arising in connection with this CONTRACT. CONTRACTOR shall make good any such damage, injury, or loss, except such as may be directly due to errors in the CONTRACT documents or caused by agents or employees of the OWNER. CONTRACTOR shall adequately protect adjacent property as provided by law and the CONTRACT documents.

The CONTRACTOR shall take all necessary precautions for the safety of employees on the WORK and shall comply with all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the WORK is being performed. CONTRACTOR shall erect and properly maintain at all times, as required by the conditions and progress of the WORK, all necessary safeguards for the protection of workers and the public and shall post danger signs warning against hazardous conditions.

#### **14. Inspection of Work:**

The OWNER and the representatives thereof and authorized federal government inspectors shall at all times have access to the WORK, and the CONTRACTOR shall provide proper facilities for such access and for inspection.

If the specifications or the OWNER requires any work to be specially tested or approved, the CONTRACTOR shall give the OWNER timely notice of its readiness for inspection. Inspections shall be promptly made and, where practicable, at the source of supply. If any WORK should be covered up without approval or consent of the OWNER, it must, if required by the OWNER, be uncovered for examination at the CONTRACTOR's expense.

#### **15. Superintendence and Supervision:**

The CONTRACTOR shall keep on the WORK, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the OWNER. The superintendent shall represent the CONTRACTOR in his/her absence, and all directions given to superintendent shall be as binding as if given to the CONTRACTOR.

The CONTRACTOR shall give efficient supervision to the WORK, using his/her best skill and attention. CONTRACTOR shall carefully study and compare all drawings, specifications and other instructions, and shall at once report to the OWNER any error, inconsistency, or omission which CONTRACTOR may discover, but shall not be held responsible for their existence or discovery.

#### **16. Changes:**

A. Change Order. The OWNER, at any time, unilaterally and without notice to sureties, in writing designated or indicated to be a change order, may order:

- (1) Changes in the WORK within the scope of this CONTRACT;
- (2) Changes in the time for performance of this CONTRACT that do not alter the scope of WORK of this CONTRACT; and/or
- (3) Changes necessary to continue the WORK or to accommodate the OWNER with essential services required to complete the WORK as normally intended in accordance with specifications.

B. Adjustments of Price or Time for Performance. If any change order increases or decreases the CONTRACTOR's cost of, or the time required for, performance of any part of the WORK under this CONTRACT, whether changed or not changed by any such change order, an equitable adjustment shall be made in the contract price or completion date, or both, and this contract shall be modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract.

Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with this contract as changed, provided that the OWNER promptly and duly makes such provisional adjustments in payments or time for performance as the OWNER deems to be reasonable.

C. Written Certification. No change order shall be authorized without a written certification, signed by an official of the OWNER responsible for monitoring and reporting the status of the costs of the total project or the contract budget, stating that funds are available therefor.

Where the OWNER has assigned an engineer to the project, the CONTRACTOR shall submit such proposals to the engineer in sufficient number that one copy may be transmitted to the OWNER, one to the project inspector, and one retained by the engineer. Upon acceptance of the proposal by all parties, a written change order will be issued.

Whenever a request for a change order proposal is received by the CONTRACTOR, he/she shall indicate thereon his/her proposed price to be added or deducted from the CONTRACT sum due to the change, together with his/her request for any adjustment in time of final completion of the entire CONTRACT.

It is further agreed that all time extensions to the completion date of the CONTRACT and any costs or changes in the CONTRACT price from any cause whatsoever that may be incurred as a result of the change order(s) are included in the change order as authorized.

#### **17. Claims Based on OWNER's Actions or Omissions:**

Notice of Claim. If any action or omission on the part of the OWNER, requiring performance changes within the scope of the CONTRACT and which are not covered by other clauses of this CONTRACT, constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue the performance of the CONTRACT in compliance with the directions or orders of the OWNER, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) The CONTRACTOR shall have given written notice to the OWNER:
  - (a) Prior to the commencement of the WORK involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission; or
  - (b) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the WORK; or
  - (c) Such further time as may be allowed by the OWNER in writing.

This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The OWNER, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the OWNER.

- (2) The notice required by Subparagraph (A)(1) of this paragraph describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and
- (3) The CONTRACTOR maintains and, upon request, makes available to the OWNER within a reasonable time, detailed records to the extent practicable, of the claimed additional costs or basis for an extension of time in connection with such changes.

#### **18. Deductions for Uncorrected Work:**

If the OWNER deems it inexpedient to correct WORK damaged or done not in accordance with the CONTRACT, an equitable deduction from the CONTRACT price shall be made therefor.

#### **19. Delays and Extension of Time:**

If the CONTRACTOR is significantly delayed at any time in the progress of the WORK by any act or neglect of the OWNER, or of any employee of either, or by any separate CONTRACTOR employed by the OWNER, or by significant changes ordered in the WORK or by strikes, lockouts, fire, unavoidable casualties or any causes beyond the CONTRACTOR's control, or by any cause which the OWNER shall decide justifies the delay, then the time of completion shall be extended for such reasonable time as the OWNER may decide. No action shall lie against the OWNER for damages or other claims due to losses attributable to hindrances or delays from any cause whatsoever, including acts and omissions of the OWNER or its agents; however, the CONTRACTOR may receive an extension of time in which to complete the WORK under this CONTRACT as provided above. The right to apply for such an extension of time shall be the exclusive remedy available to the CONTRACTOR or any Subcontractor as against the OWNER for such loss.

Any request for extension of time shall be made to the OWNER in writing within seven (7) days from the time of occurrence of cause for delay. In case of a continuing cause of delay, only one claim is necessary.

#### **20. Correction of WORK Before Final Payment:**

The CONTRACTOR shall promptly remove from the premises all WORK condemned by the OWNER as failing to conform to the CONTRACT, whether incorporated or not, and the CONTRACTOR shall promptly replace and reexecute his/her own WORK in accordance with the CONTRACT and without expense to the State of Utah and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

If the CONTRACTOR does not remove such condemned WORK within a reasonable time, fixed by written notice, the OWNER may have the materials removed and stored at the expense of the CONTRACTOR.

#### **21. Correction of WORK After Final Payment:**

Neither the final certificate of payment nor any provision in the CONTRACT documents nor partial or entire occupancy of the premises by the OWNER shall constitute an acceptance of WORK not done in accordance with the CONTRACT documents or relieve the CONTRACTOR of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The CONTRACTOR shall remedy any defects in the WORK and pay for any damage to other WORK resulting therefrom which shall appear within a period of one year from the date of substantial completion of the WORK, unless a longer period is specified. The OWNER will give notice of observed defects with reasonable promptness.

#### **22. Termination for Default Clause:**

- A. The OWNER may, subject to the provisions of Paragraph (C) below, by written notice of default to the CONTRACTOR, terminate the whole or any part of this CONTRACT in any one of the following circumstances:
  - (1) If the CONTRACTOR fails to perform this CONTRACT within the time specified herein or any extension thereof; or

- (2) If the CONTRACTOR fails to perform any of the other provisions of this CONTRACT, or so fails to make progress as to endanger performance of this CONTRACT in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of five (5) days (or such longer period as the OWNER may authorize in writing) after receipt of notice from the OWNER specifying such failure.
- B. In the event the OWNER terminates this CONTRACT in whole or in part as provided in Paragraph (A) of this clause, the OWNER may procure, upon such terms and in such manner as the OWNER may deem appropriate, supplies or services similar to those so terminated, and the CONTRACTOR shall be liable to the OWNER for any excess costs for such similar supplies or services; provided that the CONTRACTOR shall continue the performance of this CONTRACT to the extent not terminated under the provisions of this clause.
- C. Except with respect to defaults of Subcontractors, the CONTRACTOR shall not be liable for any excess costs if the failure to perform the CONTRACT arises out of causes beyond the control and without the fault or negligence of the CONTRACTOR. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the state or federal government in either their sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the CONTRACTOR. If the failure to perform is caused by the default of a Subcontractor, and if such default arises out of causes beyond the control of both the CONTRACTOR and the Subcontractor, and without the fault or negligence of either of them, the CONTRACTOR shall not be liable for any excess costs for failure to perform unless the supplies or services to be furnished by the Subcontractor were obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the required delivery or completion schedule.

If this CONTRACT is terminated as provided in Paragraph (A) of this clause, the OWNER, in addition to any other rights provided in this clause, may take over the WORK and prosecute the same to completion, by contract or otherwise, and may take possession of, and utilize in completing the WORK, such materials, equipment and plants as may be on the site of the WORK and necessary therefor. The OWNER may require the CONTRACTOR to transfer title and deliver to the OWNER, in the manner and to the extent directed by the OWNER:

- (1) Any completed portion of the WORK; and
- (2) Any partially completed portion of the WORK and any parts, tools, dies, jigs, fixtures, plans, drawings, information, and CONTRACT rights (hereinafter called "construction materials") as the CONTRACTOR has specifically produced or specifically acquired for the performance of such part of this CONTRACT as has been terminated; and the CONTRACTOR shall, upon direction of the OWNER, protect and preserve property in the possession of the CONTRACTOR in which the OWNER has an interest.

Payment for completed WORK accepted by the OWNER shall be at the contract price. Payment for construction materials delivered to and accepted by the OWNER and for the protection and preservation of property shall be in an amount agreed upon by the

CONTRACTOR and OWNER. The OWNER may withhold from amounts otherwise due the CONTRACTOR for such completed WORK or construction materials such sum as the OWNER determines to be necessary to protect the OWNER against loss because of outstanding liens or claims of former lien holders.

- E. If, after notice of termination of the contract under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the CONTRACT contains a clause providing for termination for convenience of the OWNER, be the same as if the notice of termination had been issued pursuant to such clause. If, after notice of termination of this CONTRACT under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of the clause, and if this CONTRACT does not contain a clause providing for termination for convenience of the OWNER, the CONTRACT shall be equitably adjusted to compensate for such termination and the contract modified accordingly.
- F. The rights and remedies of the OWNER provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this CONTRACT.

### 23. Application for Payments:

The CONTRACTOR shall submit an application monthly for progress payments to the OWNER for approval. The CONTRACT REPRESENTATIVE shall approve the payment, and obtain the signature of the inspector for payment. Receipts or other vouchers showing payments for the materials and labor, including payments to Subcontractors, for the preceding month shall be submitted with the application if required.

If payments are made on valuation of WORK done, such application shall be submitted at least ten days before each payment falls due. The CONTRACTOR shall, before the first application, submit to the OWNER, a schedule of values for the various parts of the WORK, including quantities, aggregating the total sum of the CONTRACT, divided so as to facilitate payments as outlined above and made out in such form as the OWNER and the CONTRACTOR may agree upon, and supported by such evidence as to its correctness as the OWNER may direct. This schedule, when approved by the OWNER, shall be used as a basis for payment, unless it be found to be in error. In applying for payments, the CONTRACTOR shall submit in duplicate a statement based upon this schedule and itemized in such form and supported by such evidence as the OWNER may direct, showing CONTRACTOR's right to the payment claimed.

In making payments to the CONTRACTOR for completed WORK or for materials stored on site, it is understood between the OWNER and the CONTRACTOR that proportionate parts of such payments as are made to the CONTRACTOR for completed WORK of Subcontractors and/or suppliers will be transmitted to such Subcontractors and/or suppliers in the form of payments for completed WORK within ten (10) days after receipt of such payments by the CONTRACTOR. The submittal of an application by a CONTRACTOR for a progress payment shall constitute prima facie representation by that CONTRACTOR that all previous proportionate payments made by the OWNER to the CONTRACTOR for completed WORK of Subcontractors and/or suppliers have been transmitted to all appropriate

Subcontractors and/or suppliers for their completed WORK within ten (10) days after receipt of respective payments.

For projects in excess of \$100,000, the CONTRACTOR may request retainage to be paid to an escrow agent for interest to accrue to the CONTRACTOR's benefit. See OWNER for forms and more information.

#### **24. OWNER's Right to Withhold Certain Amounts and Make Application Thereof:**

The OWNER may withhold from payment to the CONTRACTOR such an amount or amounts as, in its judgment, may be necessary to pay just claims against the CONTRACTOR or any Subcontractor for labor and services rendered and materials furnished in and about the WORK. The OWNER may apply such withheld amounts on the payment of such claims in its discretion. In so doing, the OWNER shall be deemed the agent of the CONTRACTOR and payments so made by the OWNER shall be considered as a payment made under the CONTRACT by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments in good faith made. Such payments may be made without prior determination of the claim or claims.

Neither the final certificate of payment nor any provision in the CONTRACT documents, nor partial or entire occupancy of the premises by the OWNER shall constitute an acceptance of WORK not done in accordance with the contract documents or relieve the CONTRACTOR of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The CONTRACTOR shall remedy any defects in the WORK and pay for any damage to other WORK resulting therefrom, which shall appear within a period of one year from the date of the certificate of substantial completion of the WORK, unless a longer period is specified. The OWNER will give notice of observed defects with reasonable promptness.

#### **25. Liability Insurance:**

To protect against liability, loss, or expense arising from damage to property or injury or death of any person or persons incurred in any way out of, in connection with or resulting from the WORK provided hereunder, CONTRACTOR shall obtain at its own expense from reliable insurance companies acceptable to OWNER's Risk Manager and authorized to do business in the state in which the work is to be performed, and shall maintain in full force during the entire period of this contract the following or equivalent insurance:

- (a) Workers' Compensation Insurance and Employers' Liability Insurance providing statutory benefits.
- (b) Comprehensive General Liability Insurance, including premises-operations; explosion; collapse and underground hazards; products and completed operation hazards; blanket contractual; broad form property damage; independent CONTRACTORS; and personal injury including employees with limits not less than \$1,000,000 combined single limit per occurrence.
- (c) Comprehensive Automobile Liability Insurance including owned, hired and non-owned automobiles with limits not less than \$1,000,000 combined single limit per occurrence.
- (d) CONTRACTOR using its own aircraft, or employing aircraft in connection with the WORK performed under this contract shall maintain Bodily Injury and Property Damage Liability coverage with a combined single limit of not less than \$1,000,000 per occurrence.

Any policy required by this section may be arranged under a single policy for the full limit required, or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy.

OWNER may accept equivalent self-insured programs in lieu of insurance upon specific approval of OWNER's Risk Manager.

Irrespective of the requirements as to insurance to be carried by CONTRACTOR as provided herein, insolvency, bankruptcy or failure of any insurance company to pay all claims accruing, shall not be held to relieve CONTRACTOR of any obligations hereunder.

The State of Utah and all Institutions, Agencies, Departments, Authorities and Instrumentalities of the State of Utah, and while acting within the scope of their duties as such: any member of their governing bodies, or of their boards, commissions, or advisory committees, or any of their elected or appointed officials, or any of their employees or authorized volunteers shall be listed as additional insureds under each of the policies required to be purchased and maintained by CONTRACTOR, with the exception of Workers' Compensation. Each policy so required shall be primary to the aforesaid additional insureds listed above, and shall apply to the full policy limits prior to any other insurance coverage which the aforesaid additional insureds may have in the event of claim under any of said policies, but, only with respect to WORK being performed by CONTRACTOR on behalf of the aforesaid additional insureds.

Before the WORK is commenced, certificates evidencing that satisfactory coverage of the type and limits set forth above are in effect, shall be furnished to the OWNER. Such insurance policies shall contain provisions that no alteration, cancellation or material change therein shall become effective except upon thirty (30) days prior written notice to OWNER's Risk Manager as evidenced by return of registered or certified letter sent to OWNER's Risk Manager.

Any and all deductibles in the above described policies shall be assumed by, for the account of, and at sole risk of CONTRACTOR.

#### **26. Property Insurance:**

OWNER shall provide "all risk" property insurance to protect OWNER, as well as all CONTRACTORS, Subcontractors and sub-subcontractors with respect to WORK performed hereunder at OWNER's own cost and expense, according to the policy forms currently in force with insurance carriers selected by OWNER's Risk Manager. OWNER's Risk Manager will furnish, upon request, all parties in interest with copies of said policies authenticated by authorized agents of the insurers or the State Risk Management Fund.

The above described policies shall be subject to a total deductible of \$500.00 per loss occurrence, which shall be assumed by all insureds in proportion to their share of the total amount of an insured loss occurrence.

Any insured property loss is to be adjusted with the OWNER's Risk Manager, and made payable to the OWNER's Risk Manager as trustee for the insureds, as their interests may appear, subject to the requirements of any applicable loss payable clause.

CONTRACTOR and OWNER hereby waive all rights against each other for damages caused by perils insured against under the property insurance provided by OWNER, except such rights as CONTRACTOR may have to the proceeds of such insurance held by the OWNER's Risk Manager as trustee.

If the CONTRACTOR requests in writing that insurance for special hazards be included in the property insurance policy, the OWNER's Risk Manager shall, if possible, include such insurance, and the cost thereof shall be charged to the CONTRACTOR by appropriate change order.

## **27. Indemnification:**

"Indemnities" shall be defined for the purposes of this section: the State of Utah and all institutions, agencies, departments, authorities, and instrumentalities of the State of Utah, and any member of their governing bodies, or of their boards or commissions, or any of their elected or appointed officers, or any of their employees or authorized volunteers.

The CONTRACTOR will protect, indemnify and hold harmless indemnities from every kind and character of damages, losses, expenses, demands, claims and causes of action arising against indemnities and their Subcontractors, their officers, agents, employees or any other person, firm or corporation whatsoever from, against, or on account of any and all claims damages, losses, demands causes of action and expenses (including attorney's fees) arising out of or resulting from any violation or alleged violation by CONTRACTOR, his officers, agents and employees, or his Subcontractors or their officers, agents and employees of any federal, state or local law, statute or ordinance, relating to the WORK to be performed by the CONTRACTOR on the project growing out of or incident to the WORK to be performed and operations to be conducted by CONTRACTOR, or his Subcontractors, under this agreement, whether such claims, death or damages, result from or are claimed to have resulted from the negligence of CONTRACTOR, his officers, agents or employees, or his Subcontractors, their officers, agents, employees, or whether resulting from or alleged to have resulted from the concurrent negligence of indemnities and/or CONTRACTORS, their officers, agents or employees. The CONTRACTOR, at his own expense, shall defend any suit or action brought against OWNER based on any such alleged injury, death or damage, and shall pay all damages, costs and expenses, including attorney's fees in connection therewith or in any manner resulting therefrom. Such damages will include all the injuries or damages occasioned by the failure of, use of, or misuse of any and all kinds of equipment, whether owned or rented by CONTRACTOR or furnished by a Subcontractor.

The OWNER shall be fully informed by the CONTRACTOR of settlement negotiations regarding any matter referred to in the preceding paragraph and shall first approve any settlement to be made by CONTRACTOR. Any such settlement shall include a release of all claims relating to OWNER. The form copy of all releases obtained shall be furnished by OWNER. If CONTRACTOR is unable to make settlement of any such claims within fifteen (15) days after the final completion date, the OWNER reserves the right, at his/her option, to either make settlement of the claim and charge the amount to CONTRACTOR or to withhold the dollar amount, in whole or in part, of the claim or claims in question from payment to CONTRACTOR until OWNER receives a release for such claim or claims.

In any and all claims against indemnities by any employee or CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this article shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

The CONTRACTOR shall indemnify and hold harmless indemnities from all claims, demands, causes of action or suits of whatever nature arising out of services, equipment,

supplies, materials and/or labor furnished by CONTRACTOR or its Subcontractors under this agreement; from all labor and/or mechanic or materialmen liens upon the real property upon which the work is located arising in favor of laborers and/or materialmen, Subcontractors and suppliers, out of services, equipment, supplies, materials and/or labor furnished by CONTRACTOR or any of his/her Subcontractors from all liens, claims and encumbrances arising from the performance of CONTRACTOR or his/her Subcontractors.

## **28. Guarantee Bonds:**

The CONTRACTOR shall include in his/her bid, as part of the quoted total, all costs involved in securing and furnishing the following bonds based on the completed cost of the CONTRACT:

- (a) A full 100% performance bond covering the faithful execution of the CONTRACT; and
- (b) A full 100% payment bond of all obligations arising thereunder.

## **29. Liens:**

Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR, if required, shall deliver to the OWNER a complete release of all liens arising out of this CONTRACT, or receipts in full in lieu thereof, and, if required in either case, an affidavit that so far as CONTRACTOR has knowledge or information the releases and receipts include all the labor and materials for which a lien could be filed, but the CONTRACTOR may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the OWNER to indemnify him/her against any lien. If any lien remain unsatisfied after all payments are made, the CONTRACTOR shall refund to the OWNER all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

## **30. Assignment:**

The CONTRACTOR shall not assign the CONTRACT or sublet it as a whole without the written consent of the OWNER, nor shall the CONTRACTOR assign any moneys due or to become due to CONTRACTOR hereunder, without the previous written consent of the OWNER.

## **31. Mutual Responsibility of Contractors:**

Should the CONTRACTOR cause damage to any separate CONTRACTOR on the WORK, the CONTRACTOR agrees, upon due notice, to settle with such CONTRACTOR by agreement or arbitration, if he/she will so settle. If such separate CONTRACTOR sues the OWNER on account of any damage alleged to have been so sustained, the OWNER shall notify the CONTRACTOR, who shall defend such proceedings at his/her own expense, and if any judgment against the OWNER arises therefrom, the CONTRACTOR shall pay or satisfy it in its entirety.

## **32. Separate Contracts:**

The OWNER reserves the right to let other CONTRACTS in connection with this WORK. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his/her WORK with theirs.

If any part of the CONTRACTOR's WORK depends for proper execution or results upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the OWNER any defects in such WORK

that render it unsuitable for such proper execution and results. His/her failure so to inspect and report shall constitute an acceptance of the other CONTRACTOR's work as fit and proper for the reception of his/her work, except as to defects which may develop in the other CONTRACTOR's WORK after the execution of his/her WORK. To insure the proper execution of his/her subsequent WORK, the CONTRACTOR shall measure WORK already in place and shall at once report to the OWNER any discrepancy between the executed WORK and the drawings.

### **33. Subcontractors:**

The two apparent low bidders shall furnish to the OWNER, within twenty-four (24) hours after the opening of bids, a list of the Subcontractors by name and amounts where Subcontractors' bids are in excess of \$5,000 and shall not employ any that the OWNER may, within a reasonable time, object to as incompetent or unfit. Bidders shall not list themselves or "self" under any category as Subcontractor unless the bidder intends to perform as the Subcontractor for which he/she lists "self," and unless he/she generally and regularly performs that type of subcontract WORK. The OWNER shall, on request, furnish to any Subcontractor, wherever practicable, evidence of the amounts certified on this account.

The CONTRACTOR agrees that CONTRACTOR is as fully responsible to the OWNER for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them, as he/she is for the acts and omissions of persons directly employed by CONTRACTOR.

Nothing contained in the CONTRACT documents shall create any contractual relation between any Subcontractor or supplier and the OWNER.

### **34. Relations of CONTRACTOR and Subcontractor:**

The CONTRACTOR agrees to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the agreement, the general conditions, and the drawings and specifications as far as applicable to his/her WORK. Nothing in this article shall create any obligation on the part of the OWNER to pay or to see to the payment of any sums to any Subcontractor.

### **35. State's Inspection:**

The OWNER, at his/her option, may assign an inspector to the project. Such staff inspector will cooperate with the CONTRACT REPRESENTATIVE and design engineer in noting deviations from, or necessary adjustments to, the CONTRACT documents or of deficiencies or defects in the construction. The staff inspector's presence on the project, however, shall in no way relieve the CONTRACT REPRESENTATIVE of the prime responsibilities as set forth herein.

### **36. CONTRACT REPRESENTATIVE Status:**

The OWNER shall appoint a CONTRACT REPRESENTATIVE who shall have general supervision of the work and he/she is the agent of the OWNER to the extent provided in the CONTRACT documents and when in special instances he/she is authorized by the OWNER to so act.

As the CONTRACT REPRESENTATIVE is, in the first instance, an interpreter of the conditions of the CONTRACT and a judge of its performance, he/she shall side neither with the OWNER nor with the CONTRACTOR, but shall use his/her powers under the CONTRACT to enforce its faithful performance by both.

### **37. CONTRACT REPRESENTATIVE's Decisions:**

The CONTRACT REPRESENTATIVE shall, within a reasonable time, make decisions on all claims of the OWNER or CONTRACTOR and on all other matters relating to the execution and progress of the WORK or the interpretation of the CONTRACT documents.

### **38. Cash Allowances:**

The CONTRACTOR shall include in the BID PRICE all allowances named in the CONTRACT documents and shall cause the WORK so covered to be done by such CONTRACTORS and for such sums as the CONTRACT REPRESENTATIVE may specify and certify, the BID PRICE being adjusted in conformity therewith, upon approval of the OWNER.

### **39. Use of Premises:**

The CONTRACTOR shall confine apparatus, the storage of materials and the operations of his/her workers to limits indicated by law, ordinances, permit or directions of the CONTRACT REPRESENTATIVE and shall not unreasonably encumber the premises with his/her materials. The CONTRACTOR shall not load or permit any part of the equipment or structure to be loaded with a weight that will endanger its safety or the safety of any person on the premises.

### **40. Cutting, Patching and Digging:**

The CONTRACTOR shall do all cutting, patching or fitting of his/her WORK that may be required to make its several parts come together properly and fit it to receive or be received by WORK of other CONTRACTORS shown upon, or reasonably implied by, the drawings and specifications for the completed structure, and he shall make good after them as the CONTRACT REPRESENTATIVE may direct.

Any cost caused by defective or ill-timed work shall be borne by the party responsible therefor. The CONTRACTOR shall not endanger any WORK by cutting, digging or otherwise, and shall not cut or alter the WORK of any other CONTRACTOR save with the consent of the CONTRACT REPRESENTATIVE.

### **41. Cleaning Up:**

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his/her employees or WORK. At the completion of the WORK, CONTRACTOR shall remove all rubbish from and about the building and all tools, scaffolding and surplus materials and shall leave his/her WORK "broom-clean" or its equivalent, unless more exactly specified. In case of dispute, the OWNER may remove the rubbish and charge the cost to the several CONTRACTORS as the CONTRACT REPRESENTATIVE may determine to be just.

### **42. Substitutions:**

Where reference is made to one or more proprietary products but restrictive descriptive material of one or more manufacturer(s) is used, it is understood that the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the plans and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the OWNER and the CONTRACT REPRESENTATIVE prior to the opening of bids. Requests for and information pertaining to said approval must be submitted to the OWNER no later than four (4) working days (not including Saturday, Sunday or state holidays) prior to bid opening. If the descriptive material is not restrictive, the products of other manufacturers specified

will be accepted without prior approval provided they are compatible with the intent and purpose of the design.

The CONTRACTOR may propose the substitution of any material as a supplement to his/her bid with the monetary amount, additive or deductive as may be the case, clearly stated and shall include the manufacturer's complete descriptive information with the proposed substitution. This shall be completely apart and separate from the BID PRICE quotation and shall be solely for the information of the OWNER and the use of such proposed substitutions shall be strictly at the decision of the OWNER. If substitution is accepted by the OWNER, the CONTRACT sum shall be adjusted from the BID PRICE either up or down as indicated on the supplementary list by change order after award.

#### **43. Laying Out WORK:**

The CONTRACTOR shall be held strictly responsible for the accuracy of the laying out of his/her WORK and for its strict conformity with the existing conditions of the building and shall determine all changes and chases and openings before WORK is commenced.

#### **44. Emergencies:**

In an emergency affecting the safety of life, or of the structure or of adjoining property, then the CONTRACTOR, without special instruction or authorization from the OWNER, shall act at his/her discretion to prevent such threatened loss or injury. Any compensation claimed to be due him/her therefrom shall be determined as provided for under Article 17, "Changes."

#### **45. Testing of Materials:**

In case the CONTRACT REPRESENTATIVE direct that any materials be tested or analyzed, then the CONTRACTOR shall furnish a sample for the test, such sample being selected according to the directions of the CONTRACT REPRESENTATIVE. The cost of testing or analysis of such sample or samples shall be borne by the manufacturer or supplier of the product. This provision shall not apply to the testing of concrete. The cost of testing shall be borne by the OWNER.

#### **46. Temporary Enclosing, Drying Out, Etc.:**

If applicable when openings are made in exterior walls, the CONTRACTOR shall, if required by the OWNER on account of weather or security conditions, close up all exterior openings (except one or more which are to be provided with battened doors, padlocks, etc.) with temporary frames covered with approved material.

The CONTRACTOR must, at all times, protect the building from damage from weather, surface water or subsoil drainage. He/she must keep the excavations dry, if necessary, by pumping, while concrete or masonry is being laid.

#### **47. Examination of Site:**

The CONTRACTOR shall visit the site and examine for himself/herself the site conditions. He/she shall furnish all labor and materials necessary for preparation of the site for the execution of this CONTRACT.

#### **48. Storage and Care of Materials:**

The CONTRACTOR shall provide, maintain and remove when directed, suitable, substantial, watertight storage sheds upon the premises where directed, in which he/her shall store his/her materials. All cement, lime and other materials

affected by moisture shall be covered and protected to keep from damage while it is being transported to the site.

#### **49. Construction Risks:**

The construction and all materials and WORK connected therewith shall be at the CONTRACTOR's risk until they are accepted, and he/she will be held responsible for and liable for their safety in the amount paid to him/her by the OWNER on account thereof.

#### **50. Temporary Appurtenances and Conveniences:**

The CONTRACTOR shall provide well-fastened ladders and other means to facilitate inspection of the work.

#### **51. Scaffolding, Tools, Etc.:**

The CONTRACTOR shall provide and erect all the necessary platforms, scaffolds and supports of ample strength required for the handling of the materials and other loading to be imposed. The same shall apply to all derricks and hoisting machinery, all appliances and materials, ladders, horses, poles, plants, ropes, wedges, centers, moulds, and other tools and materials, and the cartage thereof to and from the site as may become necessary for the performance of his/her contract.

#### **52. Sanitary Provisions:**

The CONTRACTOR shall provide a chemical toilet for his workers' use. The CONTRACTOR shall keep the toilet clean, neat and in first-class condition at all times.

#### **53. Refuse:**

Refuse barrels are to be provided by the CONTRACTOR for the workers' lunch boxes and papers.

#### **54. Removing Water:**

The CONTRACTOR shall remove, at his/her expense from all excavations and/or from the site, all unwanted water appearing from any cause during any stage of the WORK until the site is accepted by the OWNER. All excavations shall be free from water before any concreting or other WORK is done in them.

#### **55. Taxes:**

The CONTRACTOR shall include in his/her BID PRICE the cost of social security, unemployment compensation, and sales and use taxes as required by federal and state laws.

#### **56. Citizens Preferred:**

Preference shall be given in hiring citizens of the United States or those having declared their intention of becoming citizens; failure to comply may result in the OWNER declaring the contract void.

#### **57. Code Requirements:**

The provisions of the 1979 Uniform Building Code, and the 1980 Supplement to Uniform Building Code and Uniform Building Code Standards, the 1981 National Electrical Code, except as specific variances therewith may be authorized by the OWNER, and the 1979 Utah Plumbing Code as amended, shall apply.

If the drawings and specifications fail to meet the minimum standards of the above-mentioned codes, it shall be the responsibility of the CONTRACTOR to bring such information to the attention of the OWNER having jurisdiction. Subcontractors shall also inform the CONTRACTOR of any

infractions of the above-mentioned codes regarding their own particular trades.

In the event that workmanship or incidental materials are not specified or indicated, they shall at least conform to the above-mentioned codes and shall be incorporated into the work without any additional cost to the OWNER. If the plans and specifications call for items or workmanship which exceed the codes, the plans and specifications hold precedence over any code requirements.

#### **58. Nondiscrimination - Equal Employment Opportunity:**

In order to comply with the provisions of the Utah Anti-Discrimination Act of 1965, relating to unfair employment practices, the CONTRACTOR agrees as follows:

- A. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, sex, religion ancestry or natural origin.
- B. In all solicitations or advertisements for employees, the CONTRACTOR will state that all qualified applicants will receive consideration without regard to race, color, sex, religion, ancestry or national origin.
- C. The CONTRACTOR will send to each labor union or workers' representative notices to be provided, stating the CONTRACTOR's responsibilities under the statute.
- D. The CONTRACTOR will furnish such information and reports as requested by the division for the purpose of determining compliance with the statute.
- E. Failure of the CONTRACTOR to comply with the statute, the rules and regulations promulgated thereunder and this nondiscrimination clause shall be deemed a breach of contract and it may be canceled, terminated or suspended in whole or in part.
- F. The CONTRACTOR shall include the provisions of the above Paragraphs A through E in all subcontracts for this project.

#### **59. Affirmative Action:**

The CONTRACTOR will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

At its discretion, the OWNER may perform a compliance review at the office and project of the CONTRACTOR to check on compliance in hiring practices, record-keeping, contracting of agencies and unions, advertising, informing of personnel of the requirements under this provision, etc. If the visit to the project site or other information received indicates need to perform a compliance review more frequently on a project, this will be done. The size of the project, complaint situation, and past record of CONTRACTOR will determine the frequency of on-the-job compliance reviews.

#### **60. Safety:**

The CONTRACTOR shall institute a safety program at the start of construction to minimize accidents; such program to continue to the end of the job and conform to the latest general safety orders of the State Industrial Commission. The CONTRACTOR shall post signs, erect barriers, etc., as necessary to implement this program. The CONTRACTOR

shall have all workers and all visitors on site wear safety hard hats and obey all safety rules and regulations and statutes as soon as the CONTRACTOR proceeds. The CONTRACTOR shall post a sign regarding hats in a conspicuous location and furnish extra hats at his/her expense for visitors.

#### **61. Rubbish Disposal:**

Rubbish, trash, etc., shall not be burned on premises unless approved by the local fire authority, but rather, hauled from the site and legally disposed of or other methods as specified by OWNER.

#### **62. Subcontractors Financial Bid Limits and License Classification:**

The CONTRACTOR shall verify the license classification and bid limit of each of his/her Subcontractors. Regulations prohibit work of the above Subcontractors exceeding their respective bid limit and working outside of license classification as determined by the Department of Business Regulation, Department of Contractors.

In the event the bid limit or classification is not complied with, the respective Subcontractor(s) mentioned above will be disqualified by the OWNER, and the CONTRACTOR shall be responsible to provide a suitable and properly qualified Subcontractor as approved by the OWNER without a change in the contract price.

#### **63. Balancing and Testing:**

It is the intent of this specification that the site, when presented to the OWNER for final acceptance, be complete and operable in all respects, including, but not limited to, mechanical, utilities, and other systems which are tuned, tested, and balanced to the satisfaction of the OWNER, or his/her appropriate engineers and consultants. Any and all testing and balancing necessary shall be done as part of the CONTRACT with the state.

During, or in connection with the inspection of the WORK, the CONTRACTOR or his/her appropriate Subcontractor(s) shall perform such tests and/or demonstrations of the operation of the systems, or its components, as may be requested by the OWNER, or his/her appropriate engineers and consultants, as necessary to adequately determine the acceptability of the installation.

#### **64. Substantial Completion:**

The OWNER will conduct inspections to determine the dates of substantial completion and final payment, will receive written guarantees and related documents required by the CONTRACT and assembled by the CONTRACTOR and submit these to the OWNER, and will issue a final certificate for payment.

The date of substantial completion of the WORK or designated portion thereof is the date certified by the OWNER when construction is sufficiently complete in accordance with the CONTRACT documents so the OWNER may occupy the site or designated portion thereof for the use for which it is intended. When the CONTRACTOR determines that the WORK, or a designated portion thereof acceptable to the OWNER, is substantially complete, the OWNER shall prepare a list of items to be completed or corrected. The failure to include any item on such list does not alter the responsibility of the CONTRACTOR to complete all WORK in accordance with the contract documents. When the OWNER, on the basis of an inspection, determines that this WORK is substantially complete, the CONTRACT REPRESENTATIVE then will prepare a Certificate of Substantial Completion which shall establish the date of substantial completion; shall state the responsibilities of the

OWNER and the CONTRACTOR for maintenance, heat, utilities and insurance; and shall fix the time within which the CONTRACTOR shall complete the items listed therein, said time to be within the CONTRACT time unless extended pursuant to Article, "Delays and Extension of Time." The certificate of substantial completion shall be submitted to the OWNER and the CONTRACTOR for their written acceptance of the responsibilities assigned to them in such certificate. A sample form of the certificate of substantial completion is included in the specifications.

If within one year after the date of substantial completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the CONTRACT documents, any of the WORK is found to be defective or not in accordance with the CONTRACT documents, the CONTRACTOR shall correct it promptly after receipt of written notice from the OWNER to do so unless the OWNER has previously given the CONTRACTOR a written acceptance of such condition. The OWNER shall give such notice promptly after discovery of the condition.

#### **65. Other Prohibited Interests:**

No official of the OWNER who is authorized in such capacity and on behalf of the OWNER to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly interested personally in the contract or in any part hereof.

No officer, employee, attorney, engineer or inspector of or for the OWNER who is authorized in such capacity and on behalf of the OWNER to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

#### **66. Conflicting Conditions:**

Any provision in any of the CONTRACT documents which may be in conflict or inconsistent with any of the paragraphs in these general conditions shall be void to the extent of such conflict or inconsistency. In the event of conflicts of plans and specifications, the CONTRACTOR shall follow the most stringent requirements as approved by the OWNER.

#### **67. Monthly Progress Meetings:**

Monthly progress meetings may be held at the discretion of the OWNER or the general CONTRACTOR, at which time the Subcontractors and/or suppliers will be required to be present.

#### **68. Suspension of WORK:**

- A. Suspension of WORK for the Convenience of the Owner. The OWNER may order the CONTRACTOR in writing to suspend, delay or interrupt all or any part of the WORK for such period of time as the OWNER may determine to be appropriate for the convenience of the OWNER.
- B. Adjustment of Cost. If the performance of all or any part of the work is suspended, delayed or interrupted by an act or failure to act of the OWNER for an unreasonable period of time, an equitable adjustment in the CONTRACT price shall be made for any increase in the cost of performance of this CONTRACT necessarily caused by such unreasonable suspension, delay or

interruption and an equitable adjustment of time for completion of the WORK will be allowed the CONTRACTOR and the CONTRACT shall be modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay or interruption to the extent:

- (1) That performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the CONTRACTOR; or
- (2) For which an adjustment is provided or excluded under any other provision of this CONTRACT.

- C. Time Period for Claims. Any claim by the CONTRACTOR for adjustment under this clause must be asserted by the CONTRACTOR, in writing, within thirty (30) days from the date of termination of such suspension, delay or interruption; provided that the OWNER may, in his/her sole discretion, receive and act upon any such claim asserted at any time prior to final payment under this CONTRACT.

- D. Adjustments of Price. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the price adjustment clause of this CONTRACT.

#### **69. Differing Site Conditions:**

- A. Notice. The CONTRACTOR shall promptly, and before such conditions are disturbed, notify the OWNER, in writing, concerning any:
  - (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this CONTRACT; or
  - (2) Unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in this CONTRACT.
- B. Adjustments of Price or Time for Performance. After receipt of such notice, the OWNER shall promptly investigate the site, and if it is found that such conditions do materially so differ and cause an increase in the CONTRACTOR's cost of, or the time required for, performance of any part of the WORK under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the CONTRACT modified in writing accordingly. Any adjustment in CONTRACT price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this CONTRACT.
- C. Time Period for Notice of Claims. Any claim by the CONTRACTOR for an adjustment under this clause must be asserted by the CONTRACTOR, in writing, within thirty (30) days from the date of the CONTRACTOR's notice to the OWNER concerning the differing site conditions; provided that the OWNER may, in his/her sole discretion, receive and act upon any such claim asserted at any time prior to issuance of notice of substantial completion.
- D. No claim shall be allowed unless the CONTRACTOR has given the notice required in Subparagraph (A) of this clause; provided that the time prescribed therefor may be extended by the OWNER.
- E. Knowledge. Nothing contained in this clause shall be grounds for an adjustment in compensation if the

CONTRACTOR had actual knowledge of the existence of such conditions prior to the submission of bids.

#### 70. Price Adjustment:

- A. Price Adjustment Methods. Any adjustment in BID PRICE pursuant to any clause in this CONTRACT shall be made in one or more of the following ways:
- (1) By agreement on a fixed-price adjustment before commencement of the pertinent performance;
  - (2) By unit prices specified in this CONTRACT;
  - (3) By the costs attributable to the applicable events or situations, plus appropriate profit or fee, in the following manner:
    - (a) The CONTRACTOR shall furnish to the OWNER a detailed estimate of the actual cost of labor, materials, taxes and equipment required for the performance of such WORK. Equipment rental rates shall not exceed those of comparable rates charged by rental companies or as agreed to by the OWNER and CONTRACTOR prior to start of the project.
    - (b) For added or omitted work by a Subcontractor (not including unit price) the CONTRACTOR shall furnish to the OWNER a detailed estimate of the actual cost of the Subcontractors for labor, materials, taxes and equipment to be used for such WORK. Each such estimate shall be signed by the Subcontractor as his/her estimate of the costs thereto.
    - (c) The CONTRACTOR and Subcontractor agree that a fixed fee not exceeding 15% of the increased costs shall be full compensation to cover all costs of supervision, overhead, bond, and any other direct or indirect overhead expenses and profit.
  - (4) In such manner as the parties may mutually agree; or
  - (5) In the absence of agreement between the parties, by a unilateral determination by the OWNER of the costs attributable to the applicable event or situation, plus appropriate profit or fee, all as computed by the OWNER, subject to the CONTRACTOR's legal and contractual remedies.
- B. Submission of Cost or Pricing Data. The CONTRACTOR shall submit certified cost or pricing data for any price adjustments, except where they are based upon established catalog prices or market prices, or upon adequate price competition or are set by law or regulation. Any price adjustments allowable hereunder shall exclude sums found by the OWNER to have resulted from any cost or pricing data furnished by the CONTRACTOR which were inaccurate, incomplete or not current as of the date of their submission to the OWNER.

#### 71. Termination for Convenience of the Owner:

- A. The performance of WORK under this contract may be terminated by the OWNER in accordance with this clause in whole, or from time to time, in part, whenever the OWNER shall determine that such termination is in the best interest of the OWNER or any person for whom the OWNER is acting under this CONTRACT. Any such

termination shall be effected by delivery to the CONTRACTOR of a notice of termination specifying the extent to which performance of WORK under the contract is terminated, and the date upon which such termination becomes effective.

No termination may be effected unless the CONTRACTOR is given (1) not less than ten calendar days written notice (delivered by certified mail, return receipt requested), and (2) an opportunity for consultation with the OWNER prior to termination.

- B. After receipt of a notice of termination, and except as otherwise directed by the OWNER, the CONTRACTOR shall:
- (1) Stop WORK under the CONTRACT on the date and to the extent specified in the notice of termination;
  - (2) Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the WORK under the CONTRACT as is not terminated;
  - (3) Terminate all orders and subcontracts to the extent that they relate to performance of WORK terminated by the notice of termination;
  - (4) Assign to the OWNER in the manner, at the times, and to the extent directed by the OWNER, all of the right, title, and interest of the CONTRACTOR under the orders and subcontracts so terminated, in which case the OWNER shall have the right, in his/her discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
  - (5) Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the OWNER, which approval or ratification shall be final for all the purposes of this clause;
  - (6) Transfer title and deliver to the OWNER in the manner, at the times, and to the extent, if any, directed by the OWNER:
    - (a) The fabricated or unfabricated parts, WORK in process, completed WORK, supplies, and other material produced as a part of, or acquired in connection with the performance of the WORK terminated by the notice of termination; and
    - (b) The completed or partially completed plans, drawings, information, and other property which, if the CONTRACT had been completed, would have been required to be furnished to the OWNER;
  - (7) Use his/her best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the OWNER, any property of the types referred to in (6) above; provided, however, that the CONTRACTOR:
    - (a) Shall not be required to extend credit to any purchaser; and
    - (b) May acquire any such property under the conditions prescribed by and at a price or prices approved by the OWNER; and provided further that the proceeds of any such transfer of disposition shall be applied in

- reduction of any payments to be made by the OWNER to the CONTRACTOR under this CONTRACT or shall otherwise be credited to the price or cost of the work covered by this CONTRACT or paid in such other manner as the OWNER may direct;
- (8) Complete performance of such part of the WORK as shall not have been terminated by the notice of termination; and
  - (9) Take such action as may be necessary, or as the OWNER may direct, for the protection and preservation of the property related to this contract which is in the possession of the CONTRACTOR in which the OWNER has or may acquire an interest.
- C. After receipt of a notice of termination, the CONTRACTOR shall submit to the OWNER his/her termination claim, in the form and with certification prescribed by the OWNER. Such claim shall be submitted promptly but in no event not later than sixty (60) days from the effective date of termination, unless one or more extensions in writing are granted by the OWNER, upon request of the CONTRACTOR made in writing within such period or authorized extension thereof. However, if the OWNER determines that the facts justify such action, he/she may receive and act upon any such termination claim at any time after such sixty (60) day period or any extension thereof. Upon failure of the CONTRACTOR to submit his/her termination claim within the time allowed, the OWNER may determine, on the basis of information available to him/her, the amount, if any, due to the CONTRACTOR by reason of the termination and shall thereupon pay to the CONTRACTOR the amount so determined.
- D. Subject to the provisions of Paragraph (C), the CONTRACTOR and the OWNER may agree upon the whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of WORK pursuant to this clause, which amount or amounts may include a reasonable allowance for profit on WORK done; provided that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the CONTRACT price of work not terminated. The CONTRACT shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount. Nothing in Paragraph (E) of this clause, prescribing the amount to be paid to the CONTRACTOR in the event of failure of the CONTRACTOR and the OWNER to agree upon the whole amount to be paid to the CONTRACTOR by reason of the termination of work pursuant to this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the CONTRACTOR pursuant to this Paragraph (D).
- E. In the event of the failure of the CONTRACTOR and the OWNER to agree, as provided in Paragraph (D), upon the whole amount to be paid to the CONTRACTOR by reason of the termination of WORK pursuant to this clause, the OWNER shall pay to the CONTRACTOR the amounts determined by the OWNER as follows, but without duplication of any amounts agreed upon in accordance with Paragraph (D):
- (1) With respect to all CONTRACT WORK performed prior to effective date of the notice of termination, the total (without duplication of any items) of:
    - (a) The cost of such WORK;
    - (b) The cost of settling and paying claims arising out of the termination of WORK under subcontracts or orders as provided in Paragraph (B)(5) above, exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the Subcontractor prior to the effective date of the notice of termination under this CONTRACT, which amounts shall be included in the cost on account of which payment is made under (a) above; and
    - (c) A sum, as profit on (a) above, determined by the OWNER to be fair and reasonable; provided, however, that if it appears that the CONTRACTOR would have sustained a loss on the entire CONTRACT had it been completed, no profit shall be included or allowed under this subdivision (c) and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss; and
  - (2) The reasonable cost of the preservation and protection of property incurred pursuant to Paragraph (B)(9); and any other reasonable cost incidental to termination of WORK under this CONTRACT, including expense incidental to the determination of the amount due to the CONTRACTOR as the result of the termination of WORK under this CONTRACT.
- The total sum to be paid to the CONTRACTOR under (E)(1) above shall not exceed the total CONTRACT price as reduced by the amount of payments otherwise made and as further reduced by the CONTRACT price of WORK not terminated. Except for normal spoilage, and except to the extent that the OWNER shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the CONTRACTOR under (E)(1) above, the fair value, as determined by the OWNER of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the OWNER, or to a buyer pursuant to Paragraph (B)(7).
- F. In arriving at the amount due the CONTRACTOR under this clause, there shall be deducted:
- (1) All unliquidated advance or other payments on account theretofore made to the CONTRACTOR, applicable to the terminated portion of this CONTRACT;
  - (2) Any claim which the OWNER may have against the CONTRACTOR in connection with this CONTRACT; and
  - (3) The agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the CONTRACTOR or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the OWNER.
- G. If the termination hereunder be partial, the CONTRACTOR may file with the OWNER a claim for an equitable adjustment of the price or prices specified in the CONTRACT relating to the continued portion of the CONTRACT (the portion not terminated by the notice of termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices. Any claim by the CONTRACTOR for an equitable adjustment under this clause must be asserted within sixty (60) days from the effective date of the notice of termination,

unless an extension is granted in writing by the OWNER.

- H. The OWNER may, from time to time, under such terms and conditions as he may prescribe, make partial payments and payments on account against costs incurred by the CONTRACTOR in connection with the terminated portion of this CONTRACT whenever, in the opinion of the OWNER the aggregate of such payments shall be within the amount to which the CONTRACTOR will be entitled hereunder. If the total of such payments is in excess of the amount finally agreed or determined to be due under this clause, such excess shall be payable by the CONTRACTOR to the OWNER upon demand, together with interest at a rate equal to the average rate at the time being received from the investment of state funds, as determined by the State Treasurer, for the period from the date such excess is repaid to the OWNER; provided, however, that no interest shall be charged with respect to any such excess payment attributable to a reduction in the CONTRACTOR's claim by reason of retention or other disposition of termination inventory until ten (10) days after the date of such retention or disposition, or such later date as determined by the OWNER by reason of the circumstances.
- I. Unless otherwise provided for in this contract, or by applicable statute, the CONTRACTOR shall-- from the effective date of termination until the expiration of three years after final settlement under this CONTRACT-- preserve and make available to the OWNER at all reasonable times at the office of the CONTRACTOR, but without direct charge to the OWNER, all books, records, documents and other evidence bearing on the costs and expenses of the CONTRACTOR under this CONTRACT and relating to the work terminated hereunder, or, to the extent approved by the contracting officer, photographs, micrographs, or other authentic reproductions thereof.

#### **72. Liquidated Damages:**

The CONTRACTOR is referred to Attachment C, Article 12 of the contract for conditions of liquidated damages.

#### **73. Termination for Breach, Etc.:**

If the CONTRACTOR shall be adjudged bankrupt, or if CONTRACTOR should make a general assignment for the benefit of his/her creditors, or if a receiver should be appointed on account of CONTRACTOR's insolvency, or if CONTRACTOR or any of his/her Subcontractors should violate any of the provisions of this CONTRACT, the OWNER may serve written notice upon CONTRACTOR of its intention to terminate said CONTRACT; and unless within ten (10) days after the serving of such notice, such violation shall cease, the OWNER then may take over the WORK and prosecute same to completion by CONTRACT or by any other method it may deem advisable for the amount and at the expense of the CONTRACTOR. The CONTRACTOR shall be liable to the OWNER for any excess cost occasioned the OWNER thereby and in such event, the OWNER may, without liability for so doing, take possession of and utilize in completing the WORK, such materials, appliances, paint, and any other property belonging to the CONTRACTOR as may be on the site of the work and necessary therefor.

#### **74. Normal Daylight Hours:**

Contractor shall perform WORK on the premises during normal daylight hours and shall not perform WORK on the site when artificial light would be required to safely perform the WORK.

#### **75. Normal Working Days:**

CONTRACTOR shall perform the WORK during normal working days and shall not work during Sundays, or recognized national and state holidays. CONTRACTOR may take the option of working on Saturdays if the WORK is scheduled regularly to be performed on Saturdays and is approved by OWNER.

#### **76. Use of Explosives**

The storage, possession or use of explosives on the site shall be strictly prohibited unless expressly authorized by the OWNER and approved by the State.

#### **77. Compliance with Copeland Regulations**

The CONTRACTOR shall comply with the Copeland Regulations of the Secretary of Labor (29 CFR Part 3) which are incorporated herein by reference.

#### **78. Overtime Compensation**

- A. The CONTRACTOR or Subcontractor shall not require or permit any laborer or mechanic in any workweek in which he or she is employed under this CONTRACT to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek, whichever is the greater number of overtime hours.
- B. In the event of any violation of the provisions of paragraph (a), the CONTRACTOR or Subcontractor shall be liable to any affected employee for any amounts due, and to the State of Utah for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the provisions of paragraph (a) in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard forty hour workweek without payment of the overtime wages required by paragraph (a).

#### **79. Clean Air and Water**

The CONTRACTOR shall use best efforts to comply with all requirements and applicable regulations, standards, and implementation plans under the Clean Air Act (42 USC 7401 et seq.) and the Clean Water Act (33 USC 1251 et seq.). No part of the WORK shall be performed in a facility listed on the U.S. Environmental Protection Agency List of Violating Facilities during the term of the CONTRACT. CONTRACTOR further agrees to insert the substance of this clause in any Subcontract.

Clean air and water standards include any enforceable rules, regulations, guidelines, orders, or other requirements issued under the Clean Air Act, Clean Water Act, or Executive Order 11738; applicable approved implementation plans described in Sections 110(d), 111(c&d), or 112(d) of the Clean Air Act; and requirements contained in permits issued by the U.S. Environmental Protection Agency or state or local governments authorized by Sections 402 or 307 of the Clean Water Act. "Facility," as used here, means any building, plant, structure, mine, location, or site of operations owned, leased, or supervised by the CONTRACTOR or Subcontractor in the performance of the CONTRACT.

[Last Revised November 5, 2002.]

# Supplemental General Conditions

## 1. Statement Clarification of Terms:

The Division of Oil, Gas & Mining will assume responsibility for design and engineering on this project and will provide inspection. See Articles 36, 37, and 38.

## 2. Plan Checks:

Checks shall be made out to the Utah Division of Oil, Gas & Mining.

## 3. Equal Opportunity:

The CONTRACTOR agrees to abide by the provisions of Titles VI and VII of the Civil Rights Act of 1964 (42 USC 2000e) which prohibits discrimination against any employee or applicant for employment or any applicant or recipient of services on the basis of race, religion, color, or national origin. CONTRACTOR further agrees to abide by the following directives: Executive Order No. 11246, as amended, which prohibits discrimination on the basis of sex; federal regulation 45 CFR 90, which prohibits discrimination on the basis of age; Section 504 of the Rehabilitation Act of 1973 (29 USC 701 et seq), which prohibits discrimination on the basis of handicap; and Utah's Executive Order, dated June 30, 1989, which prohibits sexual harassment in the workplace.

## 4. Access to Records:

The CONTRACTOR agrees to provide the OWNER, the U.S. Office of Surface Mining, The Comptroller General of the United States, or any of their duly authorized representatives access to any books, documents, papers, and records which are directly pertinent to this CONTRACT for the purpose of making audit, examination, excerpts, and transcriptions. Such access will be made during normal business hours, or by appointment.

## 5. Retention of Records:

The CONTRACTOR agrees to retain and preserve any books, documents, papers, and records which are directly pertinent to this CONTRACT for a period of four years from the date of final payment for the WORK or from the date of Final Acceptance, whichever is later.

## 6. Variation in Estimated Quantities:

Variations Requiring Adjustments. Where the quantity of any item within the scope of this CONTRACT is an estimated quantity and where the actual quantity of such item varies by more than 15% above or below the estimated quantity stated in this CONTRACT, an adjustment in the CONTRACT price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to variation above 115% or below 85% of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the OWNER, upon receipt of a written request for an extension of time, prior to the date of final settlement of the CONTRACT, shall ascertain the facts and make adjustment for extending the completion date as in the judgment of the OWNER such facts justify.

## 7. Authority:

Provisions of this contract are pursuant to the authority set forth in Sections 63-56 UCA 1953 as amended, the Utah State Procurement Rules (Utah Administrative Code, Section R33), and related statutes which permit the OWNER to purchase certain specified services and other approved purchases for the State.

## 8. Conflict of Interest:

CONTRACTOR represents that none of its officers or employees are officers or employees of the State of Utah, unless disclosure has been made in accordance with Section 67-16-8, UCA 1953, as amended.

## 9. Separability Clause:

The declaration by any court or any other binding legal source that any provision of this contract is illegal and void shall not affect the legality and enforceability of any other provision of this contract unless the provisions are mutually dependent.

## 10. Debarment:

The CONTRACTOR certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any governmental department or agency.

[Last Revised April 2, 1993.]



## **TECHNICAL SPECIFICATIONS**

|              |                                     |
|--------------|-------------------------------------|
| SECTION 0200 | GENERAL SITE INFORMATION            |
| SECTION 0220 | MOBILIZATION/DEMOBILIZATION         |
| SECTION 0230 | ACCESS IMPROVEMENT                  |
| SECTION 0240 | DEMOLITION AND CLEAN-UP             |
| SECTION 0250 | MINE CLOSURES                       |
| SECTION 0251 | CAST-IN-PLACE CONCRETE              |
| SECTION 0252 | CONCRETE REINFORCEMENT              |
| SECTION 0253 | BAT GATE & SHAFT GRATE INSTALLATION |
| SECTION 0254 | POLYURETHANE FOAM MINE CLOSURES     |
| SECTION 0255 | CROWN PILLAR EXCAVATION             |
| SECTION 0270 | SITE GRADING/EARTHWORK              |
| SECTION 0280 | DRAINAGE CONTROL& STREAM PROTECTON  |
| SECTION 0290 | REVEGETATION                        |
| SECTION 0300 | SPECIFIC SITE REQUIREMENTS          |

## 0200 General Site Information

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

The WORK consists of reclamation of abandoned mine features as described in Section 0300. The General Technical Specifications, Sections 0200 through 0290, outline WORK broadly applicable to all abandoned mine reclamation situations and that may not be required at each mine site in this project. Section 0300 provides the site-specific detail. Where there is a conflict between Section 0300 and the General Technical Specifications (0200's), Section 0300 shall govern.

#### 1.02 SUBMITTALS

- A. Submittals requested in the Technical Specifications to be submitted with the Bid Proposal shall be included in and submitted with the sealed bid proposal delivered to the Division of Purchasing.
- B. Submittals requested in the Technical Specifications to be submitted after award of the CONTRACT or during construction shall be delivered to the designated representative for the Division of Oil, Gas and Mining (DOGM), referred to in these Specifications as the OWNER.
- C. CONTRACTOR shall submit *within five (5) days after award of the CONTRACT* a calendar of WORK for performing the WORK, including routine workdays and hours, anticipated holidays, and days that the project will remain idle. Schedule shall also indicate WORK schedules for subcontractors and their estimated start and completion days. Allowance in the schedule shall be made for routine delays due to weather or other site conditions as they occur. The OWNER shall approve said schedule. Any significant deviation from that schedule shall be submitted in writing to the OWNER in the form of an updated schedule as the WORK progresses.

#### 1.03 RELATED WORK

- A. Section 0220: Mobilization/Demobilization
- B. Section 0230: Access Improvement
- C. Section 0240: Demolition and Clean-up
- D. Section 0250: Mine Closures
- E. Section 0251: Cast-in-Place Concrete
- F. Section 0252: Concrete Reinforcement
- G. Section 0253: Bat Gate & Shaft Grate Installation
- H. Section 0254: Polyurethane Foam Mine Closures
- I. Section 0255: Crown Pillar Excavation
- J. Section 0270: Site Grading/Earthwork
- K. Section 0280: Drainage Control & Stream Protection
- L. Section 0290: Revegetation
- M. Section 0300: Specific Site Requirements

#### 1.04 CONDITIONS AND RESTRICTIONS

- A. The project area and vicinity may contain several abandoned mine and/or town sites, but WORK will be limited to items specifically identified in Section 0300: Specific Site Requirements.
- B. *The pre-bid meeting is optional.* However, due to the nature of the WORK at these sites, the CONTRACTOR is strongly encouraged to participate in the entire prebid site tour and meeting in order to submit a responsible bid. The CONTRACTOR shall acknowledge in the bid that the site

conditions have been examined and that the measurements and evaluations necessary to plan and bid the WORK have been made.

- C. Certified Person: Due to the hazards associated with abandoned mines, all WORK on mine portals shall be conducted under the supervision of a person qualified to monitor safety conditions, particularly with regard to mine atmospheres and rock stability. This person is referred to as the "Certified Person" in these specifications hereafter. For work at coal mines, the Certified Person must have current certification under the General Safety Orders of Utah Coal Mines (i.e. Mine Foreman and/or Fire Boss). For work at mines other than coal mines, alternative qualifications for the Certified Person besides Mine Foreman or Fire Boss may be considered, subject to OWNER's approval. In order to be considered for approval as Certified Person, the candidate must satisfy the following requirements:
- The candidate must have documented underground mining employment experience with job duties including direct responsibility for the safety of others. This work experience must have involved the evaluation of roof and rib stability as well as monitoring for the presence of dangerous atmospheric conditions. The candidate must provide at least two written references from the employer that can confirm this employment.
  - The candidate must be able to operate and interpret readings from a standard four-gas air sampler that measures concentrations of oxygen, carbon monoxide, methane, and hydrogen sulfide.
  - The candidate must possess a current 40-hour Mining Safety and Health Administration (MSHA) training for underground mining certification.

OWNER may consider and approve candidates for the position of the Certified Person on a case-by-case basis. CONTRACTOR is ultimately responsible for the safety of all persons on-site during WORK activities. The CONTRACTOR agrees to indemnify, save harmless, and release the State of Utah, and all its officers, agents, volunteers, and employees from and against any and all loss, damages, injury, liability, suits, and proceedings arising out of the performance of any WORK in or near mine portals which are caused in whole or in part by the negligence of the CONTRACTOR's officers, agents, volunteers, or employees, but not for claims arising from the State's sole negligence.

- D. No person shall be permitted to enter a mine opening unless the atmosphere of the opening is tested, the roof is tested and adequately supported, and only at the direction of the Certified Person. No smoking or open flames shall be permitted within 100 feet of any mine opening. Welding in or near a mine opening is permitted only with the approval of the Certified Person.
- E. CONTRACTOR shall identify and develop rapid communication procedures with the closest available emergency medical response units and medical centers. All workers, foremen, superintendents, and managers shall be indoctrinated to emergency response procedures.
- F. CONTRACTOR shall be aware that underlying mine workings exist in the areas to be disturbed by the CONTRACTOR. The location, extent, and condition of the underground workings at each mine site are not well known. These workings or voids where workings have caved may be encountered unexpectedly during the course of the WORK and present a hazard to equipment operators and other workers at the site. The CONTRACTOR shall take every precaution to protect the safety of the workers during WORK on the project. Any voids or openings excavated or discovered shall be brought to the immediate attention of the OWNER.
- G. The WORK shall stop and the OWNER shall be notified immediately if an accident occurs or upon discovery of a hazard that threatens the safety of workers or the public. The OWNER shall be notified immediately of any situation that may cause environmental damage.

- H. CONTRACTOR shall provide, erect, and maintain temporary barriers, signs, and security devices as necessary to ensure the safety of the CONTRACTOR's personnel, the OWNER's personnel, and the general public.
- I. WORK shall occur normally during daylight hours and shall not be performed when darkness or other conditions required the use of artificial light to safely perform the WORK, without the prior written approval of the OWNER.
- J. WORK shall be performed during weekdays and shall not be performed during weekends or legal State and Federal holidays without the prior written approval of the OWNER. A schedule of holidays is available from the OWNER.
- K. WORK shall be conducted with minimum interference to public or private thoroughfares. Egress and access shall be maintained at all times.
- L. Roadways shall not be closed or obstructed without permits. The CONTRACTOR will close and lock gates at the landowner's request.
- M. All trucks transporting materials and debris shall be covered with tarps or other suitable coverings if necessary to eliminate loss of debris during transportation to off-site disposal areas.
- N. CONTRACTOR shall provide water and an adequate water supply system for dust suppression where dust will cause a public nuisance or as directed by OWNER. The CONTRACTOR will pay the cost of water and dust suppression.
- O. No materials shall be placed in or be situated such that they may enter any stream, tributary, or drainage channel.
- P. Relics, antiques, artifacts and similar objects as identified by the OWNER remain the property of the OWNER. CONTRACTOR shall notify the OWNER upon discovery of cultural features and obtain direction from OWNER regarding handling of features that interfere with performing the WORK. Relics and antiques include, but are not limited to:
  - 1. Cornerstone and contents
  - 2. Commemorative plaques
  - 3. Archaeological relics or finds
  - 4. Historical relics
- Q. CONTRACTOR shall remove and promptly dispose of any contaminated, vermin infested, or dangerous materials encountered. Transformers, oil-filled electrical equipment, or other toxic materials shall be called immediately to the attention of the OWNER. Disposal of such items shall be the responsibility of the CONTRACTOR and at the direction of the OWNER in accordance with EPA and State Health requirements.
- R. CONTRACTOR shall remove from site all debris created during construction.
- S. Materials shall not be burned on site without appropriate permits and the approval of the OWNER.
- T. Blasting shall be permitted only with prior written approval of the OWNER and following submission by the CONTRACTOR of a blasting plan.
- U. Existing utilities, benchmarks, trees, vegetation, and landscaping materials which are not to be demolished, relocated, or otherwise disturbed shall be protected.

- V. Wildlife of any kind (except Norway rats) encountered during the WORK shall be left unharmed or, if captured, released unharmed offsite. Snakes, including rattlesnakes, shall not be harmed. Any wildlife inadvertently killed by the CONTRACTOR will be turned over to the OWNER to be disposed of under the Certificate of Registration (COR Number 6COLL5414) issued to the OWNER by the Utah Division of Wildlife Resources. CONTRACTOR shall immediately notify OWNER of any bats found in mine openings.
- W. CONTRACTOR shall be compensate employees at a rate of no less than 1.5 times the base rate of pay for work beyond 40 hours in one week.
- X. CONTRACTOR shall submit to OWNER each week daily logs indicating the following: 1) weather conditions, 2) crew size, 3) hours worked, 4) equipment used, 5) work completed, 6) WORK approved, 7) delays, 8) equipment downtime, 9) injuries, 10) visitors, 11) access problems, etc. OWNER has provided a form for these logs in Appendix C.
- Y. Should onset of adverse winter or extreme summer weather conditions force construction to stop prior to completion of the WORK, the sites shall be left in a condition that minimizes safety hazards and risk of erosion. Temporary erosion control structures may be required. Revegetation may be postponed to the fall if necessary.
- Z. Depending upon the bid submittals and the overall CONTRACTOR selection process, CONTRACTOR WORK may precede, follow, or occur during work by other CONTRACTORS at the same site and/or other sites in the Project Area.
- AA. CONTRACTOR shall select from a pre-determined number of staging areas identified in the specifications and secure all necessary permits, including camping permits, from the applicable land management agency.

#### 1.05 QUALITY ASSURANCE

- A. CONTRACTOR shall use only quality materials in performing the WORK.
- B. Quality of the WORK performed by the CONTRACTOR shall be subject to approval by the OWNER. CONTRACTOR shall assure that the WORK has been performed to the specifications and standards as described herein. The OWNER shall inspect and accept or reject the WORK as the WORK progresses. Payment shall be made only for WORK accepted and approved by the OWNER. CONTRACTOR shall warrant the WORK for a period of one year following final acceptance except that such material warranties and guarantees from manufacturers and suppliers that may be longer than one year shall carry for their term.

### PART 2 – PRODUCTS/MATERIALS

#### 2.01 GENERAL

Products and materials used in the WORK shall be as required in these Specifications.

#### 2.02 DELIVERY, STORAGE AND HANDLING

- A. CONTRACTOR shall be responsible for the delivery, storage and handling of all items and materials used in performing the WORK.
- B. CONTRACTOR shall be responsible for all materials used in conjunction with the WORK until said WORK is accepted and approved by the OWNER and shall warrant all materials as required by Part 1.05, Quality Assurance.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Upon receipt of notice to proceed, the CONTRACTOR shall perform the WORK as required by these Specifications and Construction Drawings.
- B. CONTRACTOR shall obtain and provide proof of all licenses, permits, bonds, insurance and other such items as may be required by these Specifications and local, regional, State and Federal jurisdictions prior to execution of the WORK. CONTRACTOR shall select from a pre-determined set of staging areas identified in the specifications and secure all necessary permits, including camping permits, from the applicable land management agency.
- C. Upon receipt by the CONTRACTOR of the NOTICE TO PROCEED, the CONTRACTOR shall notify the OWNER of the starting date and execution of the WORK shall commence in accordance with the General Specifications as included with the Agreement and the Technical Specifications as presented herein. CONTRACTOR shall provide the OWNER with a schedule for the proposed WORK in calendar, bar chart, or critical path schedule form.

## PART 4 - FORM OF AGREEMENT

### 4.01 CONTRACT AGREEMENT

The CONTRACT agreement will be in the form of that included in the bid package. This agreement may be administered as a Division of Purchasing Purchase Order. If administered as a purchase order, the purchase order will reference the bid package, and all the terms and conditions of the solicitation, including the contract form, general and supplemental general conditions, technical specifications, and addenda will apply to the agreement.

### 4.02 CHANGES TO THE AGREEMENT

- A. When these services are procured by an agency contract, OWNER shall require amendments to the Agreement to be in the form of a change order, signed by both parties. When these services are procured by a Division of Purchasing Purchase Order, amendments shall be on Form DP-28 "Request for Purchase Order Cancellation or Change."
- B. Change orders or Form DP-28's shall become attached to and part of the Agreement under the terms of the Agreement with changes as stipulated on the change order or Form DP-28. Change orders or Form DP-28's shall not release the CONTRACTOR from any other terms or conditions that apply and are a part of the Agreement.
- C. Any additional WORK must be authorized by the OWNER and must be in the form of a contract change order or Form DP-28 as an amendment to the Agreement. The change order or Form DP-28 must be fully executed prior to the CONTRACTOR undertaking any additional WORK.

## PART 5 - MEASUREMENT, PAYMENT, AND WORK INCLUDED

### 5.01 GENERAL

- A. The WORK included and measurement of and payment for that WORK shall be as described within each Section of the Technical Specifications and Supplemental General Condition #6.
- B. Total contract amount, including any change orders, shall constitute full compensation for the WORK.

- C. Payments shall only be made for those items shown on the Bid Schedule. All other costs or incidentals shall be reflected in the Bid Schedule or shall be paid at the CONTRACTOR's expense.
- D. Payment for performance and payment bonds shall be based on the completed (i.e. final) cost of the CONTRACT (see General Condition #28). The standard practice among sureties is to base premiums charged to contractors as a percentage of the contract amount and to settle premiums at the close of the contract-- if the final contract amount is less than the original, premium overpayments are refunded, if more, the premium is increased. If the CONTRACT amount changes, the lump sum line item for bonds in the Cost Schedule shall be adjusted accordingly at a fixed percentage rate. CONTRACTOR shall indicate in the place provided on the Bid Schedule the percentage rate to be used for calculating adjustments to the Cost Schedule lump sum item for bonds (Variation in Contract Bond Rate).

#### 5.02 RETAINAGE

Unless stated otherwise in the specific section of the Specifications, all final bid item payments shall have ten percent withheld as retainage until successful completion of the CONTRACT. The retainage shall be made from each progress payment, and be released upon written Final Acceptance by the OWNER.

#### 5.03 PENALTIES

- A. The OWNER reserves the right to levy a penalty payment for areas unnecessarily disturbed during the WORK. These areas include any archeological sites, paleontological sites, or undisturbed vegetation areas.
- B. The penalty for unnecessary disturbance to archeological sites, paleontological, or undisturbed vegetation areas will be based on the per acre disturbance at the CONTRACTOR's bid amount for revegetation of adjacent sites.

END OF SECTION 0200

## **0220 Mobilization/Demobilization**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

The item for payment for mobilization/demobilization is intended to compensate the CONTRACTOR for operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to and from the project area, movement between the various mine sites included within the project area, and for all other WORK and operations which must be performed or costs incurred prior to the initiation of meaningful work at the site.

### **PART 2 – PRODUCTS/MATERIALS**

#### **2.01 DRINKING WATER AND SANITARY FACILITIES**

CONTRACTOR shall provide and maintain safe drinking water and sanitary facilities for all employees, all subcontractors' employees, and the OWNER. Drinking water and sanitary facilities shall comply with all regulations of the local and state departments of health and be approved by the OWNER.

#### **2.02 COMMUNICATIONS**

CONTRACTOR shall provide OWNER's onsite inspector or representative with an onsite communication system for the OWNER's exclusive use for the full duration of the project construction. The communication system shall be a cellular telephone and cellular service, or equivalent. Cell phones shall have sufficient power to allow clear transmissions from a majority of the project area. Any necessary accessories, such as antennas, batteries, battery charger, cigarette lighter adapter, and operating manuals, shall be provided. This item is not a separate bid or pay item; all telephone costs are subsidiary to and should be included in the overall cost for Mobilization/Demobilization.

### **PART 3 - EXECUTION**

#### **3.01 PREPARATION**

- A. Preparation of the WORK shall include obtaining all permits and other such incidentals as necessary to execute the WORK. CONTRACTOR shall select from a pre-determined set of staging areas identified in the specifications and secure all necessary permits, including camping permits, from the applicable land management agency.
- B. Permits shall be posted or readily available prior to start of construction activities as required by municipal, State, or Federal regulations.

#### **3.02 EXECUTION**

Upon receipt by the CONTRACTOR of due NOTICE TO PROCEED, the CONTRACTOR shall notify the OWNER of the starting date and execution of the WORK shall commence in accordance with the General Specifications as included with the Agreement and the Technical Specifications as presented herein. CONTRACTOR shall provide the OWNER with a schedule for the proposed WORK in calendar, bar chart, or critical path schedule form.

### **PART 4 - MEASUREMENT AND PAYMENT**

#### 4.01 BASIS FOR PAYMENT

No partial payments will be made for multiple equipment moves or for moving between sites. Only the following partial payment shall be made of the total lump sum for mobilization/demobilization. Payment of sixty percent (60%) of total lump sum for mobilization will be made when 10 percent of the overall BID PRICE has been earned from other bid items. Payment of the remaining forty percent (40%) of the total lump sum for demobilization will be made after issuance of the Certificate of Substantial Completion at the completion of CONTRACT. Payments for mobilization/demobilization are not subject to withholding of retainage. The BID PRICE for mobilization/demobilization will also include those incidental costs as required by the CONTRACTOR in order to commence the WORK such as permits, insurance, and other such items as may be required to perform the WORK.

#### 4.02 MEASUREMENT

Measurement will be based on the amount of the WORK performed and accepted and approved by the OWNER. When 10 percent of the WORK has been earned, the CONTRACTOR may submit on the invoice sixty percent (60%) of the BID PRICE for mobilization/demobilization as set forth above. On completion of the CONTRACT and issuance of the Certificate of Substantial Completion, the CONTRACTOR may claim the remaining forty percent (40%) of the BID PRICE for mobilization/demobilization.

#### 4.03 PAYMENT

The BID PRICE for mobilization/demobilization will be paid once only and will include complete mobilization, demobilization, and moves between sites regardless of the number of times equipment is moved or additional equipment is transported to or from the construction site. The BID PRICE will also include those incidental costs as required by the CONTRACTOR in order to commence with the WORK such as permits, insurance, and other such items as may be required to perform the WORK.

END OF SECTION 0220

## **0230 Access Improvements**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

This item for payment is to develop and maintain site access or improve existing site access. Improvement is limited to the extent required to complete WORK at each mine site. It is not the intent of this WORK to construct roads. The WORK shall include temporary site access to reach sites of construction, and maintenance of existing permanent roads that must be used for movement of equipment, materials and labor. CONTRACTOR shall minimize disturbance resulting from site access improvements. In areas in which a passable road did not previously exist, the CONTRACTOR shall reclaim the access improvement in accordance with this Section upon completion of the WORK. Existing, permanent roads shall be left in a condition at a minimum as good as that prior to the WORK.

#### **1.02 SUBMITTALS**

The CONTRACTOR shall submit with the Bid Proposal a description of access improvements to be performed at each site and shall not deviate from this plan without the written approval of the OWNER. For sites not easily accessible, the CONTRACTOR may choose to gain equipment access, do hand work, or access with a helicopter.

#### **1.03 RELATED WORK**

- A. Section 0240: Demolition and Clean-up
- B. Section 0250: Mine Closures
- C. Section 0253: Bat Gate & Shaft Grate Installation
- D. Section 0254: Polyurethane Foam Mine Closures
- E. Section 0255: Crown Pillar Excavation
- F. Section 0270: Site Grading/Earthwork
- F. Section 0280: Drainage Control & Stream Protection
- G. Section 0300: Specific Site Requirements

### **PART 2 – PRODUCTS/MATERIALS**

- 2.01 CONTRACTOR may utilize local resistant materials or import road base materials to maintain access and minimize damage to the environment. If wet weather conditions prevail, OWNER may require CONTRACTOR to stockpile road base material at work sites in order to maintain the schedule.
- 2.02 CONTRACTOR may choose to temporarily place corrugated steel pipe or other conveyance structures in the access improvement. The CONTRACTOR shall comply with Section 0280: Drainage Control and Stream Protection unless otherwise directed by the OWNER.

### **PART 3 - EXECUTION**

- 3.01 The location, alignment and grade of any temporary access improvement shall be in accordance with Section 0300: Specific Site Requirements, subject to Section 0280: Drainage Control and Stream Protection, and subject to the approval of the OWNER.
- 3.02 Temporary access improvements shall be constructed so as to minimize disturbance to existing vegetation, and to minimize potential erosion.

- 3.03 Where temporary site access crosses perennial or intermittent streams, the CONTRACTOR shall maintain the drainage by providing a temporary crossing in accordance with Section 0280: Drainage Control and Stream Protection, and subject to the OWNER'S approval. Upon completion of the WORK, CONTRACTOR shall restore drainages to approximate original condition, subject to the acceptance and approval of the OWNER.
- 3.04 When no longer required by the CONTRACTOR, temporary access improvements will be reclaimed in the following manner. Existing passable access shall be left in or returned to approximate original condition. Access previously impassable or newly created access shall be restored to blend with surrounding contours and reclaimed for erosion control as shown on the Drawings. The surfaces of such access shall be scarified and revegetated in accordance with Section 0290: Revegetation.

#### PART 4 - MEASUREMENT AND PAYMENT

##### 4.01 MEASUREMENT

Measurement shall be per mine site as access improvement WORK is completed, accepted and approved by the OWNER. Measurement shall be consistent with the BID PRICE. The OWNER's approval of mine site access development will be authorization for payment of 50 percent of the pay item which will also include consideration for maintenance of temporary access to the site throughout the WORK. The OWNER's acceptance of all WORK completed and approval of the temporary site access reclamation for the site will be authorization for payment of the balance of this pay item.

##### 4.02 PAYMENT

Payment for maintenance of existing paved and gravel-surfaced roads will be consistent with the BID PRICE for this item. Payment of 50 percent of the BID PRICE will be made upon receipt of the invoice submitted by CONTRACTOR. The balance of 50 percent of the BID PRICE may be invoiced and paid after approval of the site WORK and approval of site access reclamation. Payment of this item is subject to withholding of the retainage.

END OF SECTION 0230

## 0240 Demolition And Clean-Up

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

The WORK consists of the demolition and clean-up of designated structures and areas including, but not limited to, those indicated in Section 0300: Specific Site Requirements. The WORK shall include, but not be limited to, the removal and disposition of concrete slabs and foundations, miscellaneous wood, metal, stone and masonry structures, and debris associated with the abandoned mine operation or generated during construction. Clean-up of miscellaneous debris exposed at the surface and randomly located across any site has not been specifically identified due to the impracticality of such extensive identification. However, it is the intent of these Specifications to require removal and disposal of all surface debris associated with the abandoned mine operations. Such removal and disposal shall be included in the CONTRACTOR's scope of WORK.

#### 1.02 SUBMITTALS

- A. CONTRACTOR shall submit *with the Bid Proposal* demolition and removal procedures and schedule for approval. This should indicate if blasting is to be used in structure demolition.
- B. CONTRACTOR shall submit *after execution of the CONTRACT and prior to disposal* proof of permission for debris disposal off site at a licensed disposal site.

#### 1.03 RELATED WORK

- A. Section 0270: Site Grading and Earthwork
- B. Section 0300: Specific Site Requirements

#### 1.04 CONDITIONS AND RESTRICTIONS

- A. Demolition shall be conducted to minimize dust generation and public nuisance.
- B. CONTRACTOR shall provide, erect, and maintain temporary barriers and security devices as necessary to ensure safety of CONTRACTOR's personnel, the OWNER's personnel, and the general public.
- C. Debris burial in, mixing with, or covering by fill material is not allowed on site.
- D. Debris placement in mine openings is only allowed with site by site approval from the OWNER.
- E. Materials shall not be burned on site.

### PART 2 – PRODUCTS/MATERIALS

CONTRACTOR may require materials for demolition and clean-up, such as wrappings or impermeable coverings not otherwise called for in other sections of these Specifications.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

CONTRACTOR shall secure any and all required permits for the demolition and clean-up WORK at his or her expense.

### 3.02 EXECUTION

- A. CONTRACTOR shall demolish only those structures and appurtenances indicated. Demolition shall be performed in an orderly and careful manner. CONTRACTOR shall clean up and dispose of all debris exposed at the surface.
- B. Demolished materials of every nature shall become the property of the CONTRACTOR and shall be disposed of away from the site or at locations indicated in Section 0300: Specific Site Requirements or on the Drawings.
- C. Relics, antiques, artifacts and similar objects as identified by the OWNER remain the property of the OWNER. CONTRACTOR shall notify the OWNER prior to removal and obtain acceptance regarding method of removal. Relics and antiques include, but are not limited to:
  - 1. Cornerstone and contents
  - 2. Commemorative plaques
  - 3. Archaeological relics or finds
  - 4. Historical relics
- D. CONTRACTOR shall remove and promptly dispose of any contaminated, vermin-infested, or dangerous materials encountered. Transformers, oil-filled electrical equipment or other toxic materials shall be called immediately to the attention of the OWNER. Disposal of such items shall be at the direction of the OWNER in accordance with EPA and State Health requirements.
- E. CONTRACTOR shall remove foundation walls and footings to a minimum three feet below finished grade as indicated in the Drawings unless otherwise directed in Section 0300: Specific Site Requirements.
- F. CONTRACTOR shall remove all concrete slabs on grade as indicated in the Drawings unless otherwise directed in Section 0300: Specific Site Requirements.
- G. CONTRACTOR shall provide water and an adequate water supply system for dust suppression for haul roads and demolition WORK where dust will cause a public nuisance or as directed by the OWNER. The cost of water will be paid by the CONTRACTOR.
- H. Depressions resulting from demolition operations shall be filled with materials, approved by the OWNER, from on the site or from designated borrow areas unless located in an area where further excavation is required to yield the reclamation contours shown in the Drawings. The fill material shall be in accordance with Section 0270: Site Grading/Earthwork.
- I. CONTRACTOR shall grade and compact areas affected by demolition to maintain site grades and contours. In no case shall slopes exceed 3h:1v or natural site contours.
- J. CONTRACTOR shall remove demolished materials from site in an orderly fashion. CONTRACTOR shall leave site in clean condition for reclamation grading and earthwork.
- K. CONTRACTOR shall remove from site all debris created during construction.
- L. Final shape and completeness of the WORK shall be subject to approval by the OWNER.

### 3.03 SALVAGING MATERIALS

All salvaged materials shall become the property of the CONTRACTOR with the exception of relics, antiques or artifacts identified by the OWNER. Salvaged materials from the structures may be

stored onsite temporarily, but not beyond the date specified for completion of the CONTRACT. Any value of salvaged materials or costs associated with the removal of equipment, structures, or materials shall be reflected in the bid price amount for Demolition and Clean-up.

#### PART 4 - MEASUREMENT AND PAYMENT

##### 4.01 MEASUREMENT

- A. Measurement shall be per itemized structure or mine site (as specified on the bid sheet) as demolition and clean-up WORK is completed, accepted, and approved by the OWNER.
- B. The final quantities for major categorizations of materials may vary from the estimated quantities provided. The estimated quantities are based on information gathered and interpreted from surface investigations.

##### 4.02 PAYMENT

Payment for the demolition and clean-up WORK shall be per itemized structure or mine site, at the BID PRICE upon approval of the OWNER for all of the WORK described in this Section.

END OF SECTION 0240

## 0250 Mine Closures

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

This section describes the various types of mine closures to be used to seal mine openings. The WORK described in this Section also includes preparation, excavation and backfilling of subsidence openings into mine voids. The requirements for furnishing and placing stone and block closures and backfill closures are described here and are indicated on the Drawings. The WORK includes all preparation, labor, materials, furnishing and placing materials, equipment and incidentals necessary to complete the mine closures.

#### 1.02 SUBMITTALS

- A. CONTRACTOR shall submit *with the Bid Proposal* a list of equipment to be used to complete this section of the WORK.
- B. CONTRACTOR shall submit *with the Bid Proposal* the proposed construction procedures in writing.
- C. CONTRACTOR shall submit *after the award of CONTRACT and before Notice to Proceed* a copy of the certification of the Certified Person (see Section 0200, Part 1.04.C) for approval by the OWNER.
- D. CONTRACTOR shall furnish the OWNER *upon completion of the WORK* a set of as-built drawings which shall be required for release of the retainage.

#### 1.03 RELATED WORK

- A. Section 0251: Cast-In-Place Concrete
- B. Section 0252: Concrete Reinforcement
- C. Section 0253: Bat Gate and Shaft Grate Installation
- D. Section 0254: Polyurethane Foam Mine Closures
- E. Section 0280: Drainage Control & Stream Protection
- F. Section 0290: Revegetation
- G. Section 0300: Specific Site Requirements

#### 1.04 PROTECTION

- A. CONTRACTOR shall exercise precautions appropriate to working near, over, or in areas prone to subsidence. Such known areas should be flagged by the CONTRACTOR prior to the commencement of the WORK. Personnel shall be informed of special safety procedures for equipment usage and general work in these areas.
- B. Before any personnel enter any openings a check for explosive and toxic gases shall be made by the Certified Person (see Section 0200, Part 1.04.C). Continuing checks shall be made throughout the closure operation by the Certified Person.
- C. Personnel shall not enter any mine opening unless under the direction of the Certified Person.
- D. No personnel shall be allowed to work under an unsupported mine roof. Temporary support shall be installed under the direction of the Certified Person qualified to determine roof conditions.

- E. CONTRACTOR shall inspect openings for old dynamite prior to construction activities.
- F. Smoking or any open flame in or within 100 feet of the mine openings is prohibited.
- G. Personnel shall wear safety harnesses and be properly and securely anchored to a fixed anchor point while working within 15 feet of vertical openings, unless otherwise approved in writing by the OWNER.

## PART 2 – PRODUCTS/MATERIALS

### 2.01. CONCRETE BLOCK

Solid concrete block shall be high strength with a minimum compressive strength of 3,000 pounds per square inch. Hollow block used as shown on the Drawings must be concrete-filled.

### 2.02 BACKFILL

Backfill material shall normally consist of mineral soil, subsoil, or a blend of mineral soil and subsoil. Backfill material shall be free from combustible materials. This shall include but not be limited to wood, wood products, trash and vegetation.

### 2.03 MORTAR

Mortar shall be either Masonry Cement, 1:3 mix, Type N, or Portland Cement and Lime, 1:1:6 mix, Type N. Precautions must be taken to prepare and protect mortar during cold weather. Mortar will have a 28 day minimum compressive strength for 2-inch cubes of 700 psi.

### 2.04 CONCRETE

Concrete shall be in accordance with Section 0251: Cast-in-Place Concrete.

### 2.05. REINFORCEMENT

Reinforcement shall be in accordance with Section 0252: Concrete Reinforcement.

### 2.06 FILTER CLOTH

Filter cloth shall be a non-woven geotextile fabric having a minimum thickness of 15 mil in accordance with ASTM D-1777 and a minimum permeability of  $10^{-2}$  centimeters per second, such as Fibertex 150 manufactured by Crown Zellerbach, or an approved equivalent.

### 2.07 TEMPORARY MINE ROOF SUPPORTS

- A. Mine roof supports shall be wooden posts or approved equal that have the following minimum requirements:
  - 1. 4½ inch diameter.
  - 2. Spruce or pine with a specific gravity between 0.35 and 0.48.
  - 3. Moisture content between 10.8 and 14 percent.
  - 4. Allowable unit stress of extreme fiber in bending of 750 psi for spruce or 700 psi for pine.
  - 5. Maximum diameter of knots on one surface no greater than ½ inch.
- B. Caps and wedges shall be used for installation of roof supports.
- C. Mine roof jacks may be substituted for wooden posts with the approval of the OWNER.

## PART 3 - EXECUTION

### 3.01 PREPARATION FOR MINE CLOSURES

- A. CONTRACTOR shall clear and grub the face area of mine openings of all vegetation, wood and debris to the extent shown on the Drawings. CONTRACTOR shall inspect, scale and secure the mine openings to a degree that will make the WORK safe to perform. Particular care shall be taken to make WORK conditions safe in instances where, due to the condition of the opening and the probability of loose soil and rock above the opening, there is danger of a rockfall. For openings to be backfilled the CONTRACTOR shall excavate the brow back to a stable condition prior to initiation of closure operations, unless otherwise directed by the OWNER.
- B. The roof and ribs of the mine openings may contain loose rock. Such loose materials shall be scaled by use of tools or equipment extended into the openings before personnel enter the opening for placement of mine roof supports or for any other reason.
- C. Loose, unstable materials typically exist just inside the opening. These materials shall be removed from the working surface inside of the mine openings so a solid working surface exists on which to build the mine closures. The working surface shall be inspected, accepted and approved by the OWNER.
- D. Temporary mine roof supports shall be installed on no more than four foot centers before any personnel enter the opening for construction purposes.
- E. CONTRACTOR shall construct work pad as required.
- F. Bat Exclusion: CONTRACTOR shall exclude bats from mine workings prior to installation of permanent closures as required in these specifications. The exclusion process must be conducted during the warm season when bats are flying but before young bats are born (warm season and birthing dates vary depending on geographic location and should be specified by the bat biologist), or in the fall prior to the swarming behavior that leads to hibernation. An attempt to close mines before the warm season may entomb hibernating bats that cannot fly. The preferred method for exclusion of bats from an adit or shaft is to block the portal or shaft opening with 1-inch diameter chicken wire. The wire permits bats to escape and fly out of the mine, but they will not fly back through the wire into the mine. The wire should be placed over the entrance at least a week in advance and shall be left in place until the date of the closure. The wire should be removed during the day and closure should take place immediately.

### 3.02 INSTALLATION OF MINE CLOSURES

#### A. BLOCK WALL CLOSURE

- 1. CONTRACTOR shall construct walls in the adits as specified in Section 0300: Specific Site Requirements. Variation of the location of the walls will be allowed so that CONTRACTOR can select a suitable location for the walls, with approval of OWNER. Parameters for suitable location of the walls shall be as follows:
  - a. Select an area in which competent rock is found in the back, ribs, and sill (roof, walls, and floor) of the adit.
  - b. Utilize irregularities in the ribs and back where possible such that the wall can be "keyed" into the rock to provide more strength and integrity to the wall.

- c. Locate the wall as far into the adit as is reasonable to reduce visibility of the wall from outside the opening and a maximum of 10 feet with competent brow unless otherwise approved by the OWNER. Allowance for the location of the walls is discussed in Section 0300. Where the remaining portion of the adit left open is unstable or unsafe, backfill shall be placed from the brow to the wall unless otherwise approved by the OWNER.
2. CONTRACTOR shall scale down back and ribs (roof and sides) of the adit, removing any loose rock from the area in which the wall is to be constructed and along access to bulkhead. Any mud, clay, moss or other materials shall be removed where the wall is to be constructed which would be deleterious to the integrity of the wall and would not allow good bonding of the mortar to the rock. CONTRACTOR shall excavate sill (floor) of adit to solid rock where the wall is to be constructed. Drainage shall be provided for any water that tends to accumulate on either side of the bulkhead as described in Part 3.02.A.6 of this Section. Excavated materials shall be cast into the adit behind the bulkhead to minimize surface disturbance in the area.
3. Concrete foundations shall be constructed unless competent foundation rock is encountered which is not friable, subject to deterioration, or otherwise unacceptable and the foundation rock is approved by OWNER. The foundation shall be a minimum of 18 inches in thickness and 30 inches wide to accommodate the 2-foot thick wall. The foundations shall be made of concrete as specified in Section 0251: Cast-In-Place Concrete. Concrete shall be reinforced with No. 4 rebar as shown on the Drawings and as specified in Section 0252: Concrete Reinforcement.
4. CONTRACTOR shall construct walls from foundation or solid rock base if approved by OWNER. Walls shall be constructed of concrete block, native stone, or imported stone. Concrete block walls shall be a minimum of 16 inches thick. Native stone and imported stone walls shall be constructed to a minimum thickness of 2 feet at the base and 18 inches at the top. The wall shall be free of any voids within the wall structure and shall be 100 percent rock and mortar construction. Hollow block bricks, when used, shall be concrete filled. Mortar shall be free of voids and air pockets and shall be firmly packed along ribs and roof of the opening to maintain the integrity of the wall and to make an effective seal.
5. CONTRACTOR shall use the natural shape and irregularities of the mine opening to "key" the wall to the mine opening to provide strength and protection of the wall from damage due to vandalism.
6. Designated openings shall require the installation of a drainage pipe. The drainage pipe shall be located near the base of the stone wall within 15 inches of the intersection of the floor material in the approximate center of the wall or near a low spot along the base. The drain pipe shall extend through the foundation or the base of the wall and a trap shall be formed outby the wall near the brow as shown on the drawings. The drain pipe shall protrude a minimum of 12 inches on either side of the wall and shall be made from 6-inch nominal diameter, Schedule 80 PVC pipe. The inside end of the pipe shall be firmly supported by block or natural stone. Both the inside and outside ends of the pipes shall be clear of any obstructions which would impair or restrict flow. Both ends of the pipe shall be covered with a protective screen mesh. Gravel shall be installed over the ends of the pipes to protect the pipe from roof falls and plugging. Gravel shall form a drain and cover the top of the pipe with a minimum of 8 inches of material. The gravel drain shall be no less than 18 inches wide and shall extend to and from the end of the pipes a minimum of two feet. Gravel used in the drain channels shall be selected material ranging from 3/4 to 6 inch in size. CONTRACTOR shall extend a drainage channel away from the bulkhead if it is situated such that water could impound near the base.

7. As further protection, grout shall be used to seal the base of the bulkhead and shall be placed to partially cover the drainpipe. Grout should extend one foot to either side of the base of the wall.
8. The portal areas shall be cleared of all building materials, trash and debris. The site shall be left in a clean and finished appearance.
9. Revegetation of sites shall be completed as specified in Section 0290: Revegetation.
10. Final acceptance of the WORK shall be subject to field inspection by the OWNER.

**B. BACKFILL CLOSURE**

1. CONTRACTOR shall backfill mine openings as described in Section 0300: Specific Site Requirements or as directed by the OWNER. Backfill shall contain sufficient fines to minimize void space.
2. Drainage lines shall be extended, if required, to the projected limits of the backfill. The drain line shall be placed on a minimum slope of 2 percent and firmly bedded with well-compacted sand and gravel. The end of the pipe shall be protected as described in Part 3.03.A.7.
3. Backfill shall be placed in mine openings to minimum dimensions described and in a manner to eliminate voids. CONTRACTOR shall construct a work pad in front of the opening as required to allow for uniform access to ram the backfill into the opening utilizing a ram or backhoe bucket. Care should be taken not to push the wall out if one has been installed. Materials which require compaction shall be tamped to achieve compaction such that any additional settlement of the fill will not result in reopening of the portal.
4. Final shape of the fill shall be mounded over the opening and blended into surrounding contours as much as practical. Runoff and snowmelt shall be diverted away from and across the fill by use of small channels containing light riprap so that the fill does not erode or impound water.
5. Revegetation of sites shall be completed as specified in Section 0290: Revegetation.
6. The portal areas shall be cleared of all building materials, trash and debris. The site shall be left in a clean and finished appearance.
7. Final acceptance of the WORK shall be subject to field inspection by the OWNER.

**C. HAND BACKFILL CLOSURE METHOD**

1. Hand Backfill Closure Method shall be used only in places inaccessible to heavy equipment as designated in Section 0300: Specific Site Requirements. The backfill requirements of Section 0250: Mine Closures, Part 3.03.B apply except as provided for equipment or approved by the OWNER.
2. CONTRACTOR shall obtain backfill materials from areas specified in Section 0300: Specific Site Requirements, or as directed by the OWNER.
3. Backfill materials shall be placed in 12 inch thick horizontal lifts in the locations and to the extent shown on the Drawings.

**D. WALL AND BACKFILL CLOSURE**

Designated mine openings shall be backfilled after the installation of the wall. Bring backfill to the grades shown in the Drawings or as designated in Section 0300: Specific Site Requirements to blend with natural contours. Walls shall be installed per Section 0250, 3.02 A, B, and C.

E. VERTICAL SHAFT BACKFILL CLOSURE METHOD

1. Timber and debris shall be removed from openings to the extent safely possible.
2. CONTRACTOR shall inspect the collar of the opening and determine required precautions for safe completion of WORK. Installation of a short conveyor belt or a ramp may be required.
3. Shaft shall be filled with backfill material to a height above the collar of the shaft to provide drainage away from the opening. The backfill shall be well-graded with a maximum particle size of approximately 2 feet in diameter.
4. Filter cloth shall be installed as shown on the Drawings.
5. CONTRACTOR shall place and compact the backfill starting five feet below the surface. Suitable compaction energy shall be applied in this zone in one-foot lifts by either pressure from the back of the backhoe bucket or other means accepted and approved by the OWNER. The upper five feet of backfill shall not contain any material that may have elevated sulfate concentrations.
6. The backfill shall be mounded a minimum of 24 inches above the adjacent grade, or shall be sloped at 3h:1v and extend a minimum 3 feet horizontal distance beyond the edge of the shaft.

3.03 MINE CLOSURE GRADING

- A. CONTRACTOR shall bring backfill to the grades shown on the Drawings or to blend with natural contours. Backfill shall be free of voids and shall be compacted by mechanized equipment or hand-held mechanical compactors in one foot lifts.
- B. CONTRACTOR shall extend the drainage line (if required) to the projected limits of the backfill. The drain line shall be placed at a minimum slope of 2 percent and firmly bedded with well compacted sand and gravel. The end of the pipe shall be protected as described in Part 3.03.A.7.
- C. The backfilled slopes shall be covered with a minimum of 6 inches of soil/rock fill available on site from areas designated by the OWNER.
- D. Revegetation and mulching of the disturbed areas shall be performed in accordance with Section 0290: Revegetation.
- E. Final shape and completeness of the WORK shall be subject to approval by the OWNER.

3.04 MINE LOCATION MONUMENTS

- A. CONTRACTOR shall install at each mine closure a permanent monument (aluminum survey cap). OWNER will provide and CONTRACTOR will install the survey cap.
- B. At backfill closures, monuments shall be installed on rebar stakes. Stakes shall be #5 (5/8-inch diameter) rebar, normally 3 to 4 feet long. The rebar shall be securely anchored in the ground

with the end extending above the final grade 2 to 6 inches. CONTRACTOR may opt to use soil plates, deadmen, bends, or other devices to ensure that the rebar is securely anchored. The exposed end of the rebar shall be squarely cut and free of bends, flaring, mushrooming, or burrs that would prevent proper seating of the survey cap. Seating of the cap onto the rebar shall be done taking precautions not to mar the text. Where site conditions permit and with approval of OWNER, monuments may be set directly into bedrock with epoxy resin as described below.

- C. At structural closures (bulkheads or steel grates), monuments may be set in concrete footers, grade beams, or seams while the concrete is wet or set in bedrock with epoxy resin. Installation in bedrock requires drilling a 1¼-inch diameter by 2 inch deep hole to receive the cap.
- D. The placement of the monument will be determined by the OWNER, but typically it will be centered in or adjacent to the mine opening for backfill closures. Monuments should not be placed where it is necessary to climb onto the closures to read them. Monument positioning should consider the potential for vandalism and the potential for siltation that could bury the cap. Monuments may be installed in by grate closures, but not so deep that they cannot be easily read.

#### PART 4 - MEASUREMENT AND PAYMENT

##### 4.01 BASIS OF PAYMENT

Basis of payment for the WORK will be on the BID PRICE per opening for completion of all the WORK as described in this Section. Breakdown of the WORK into unit prices for individual mine openings shown in the Bid Schedule will be used in determining partial payment or adjustment of the total BID PRICE for this Section as the WORK progresses.

##### 4.02 MEASUREMENT

Measurement for mine closures will be on the BID PRICE per mine opening. Measurement will be based on and compared to the dimensions and quantities identified on the bid sheets, these Specifications and Drawings. The OWNER will request intermediate measurements to determine progress of the WORK.

##### 4.03 PAYMENT

- A. Payment for mine closures will be for each mine site at the BID PRICE. Payment will only be for those closures which are complete, accepted, and approved by the OWNER. No partial payments will be made for individual mine openings.
- B. Payment at the UNIT PRICE for additional quantities will be made for mine closures when final quantities are greater than 15 percent in excess of the estimated quantities shown on the bid sheet for a given mine site. Such unit price payment will require proof of additional quantities provided by the CONTRACTOR and approval of the OWNER, and shall be full compensation for the approved additional masonry or backfilling. Reduction of payment for lesser quantities of masonry or backfill will also be made by the OWNER for quantities greater than 15 percent below the estimated quantity shown on the bid sheet for a given mine. Such UNIT PRICE adjustment will require approval of the OWNER and will be full compensation for approved additional or reduced mine closure quantities.

END OF SECTION 0250

## 0251 Cast-In-Place Concrete

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

Cast-in-place concrete shall be used in the WORK for mine closures. This Section provides the material standards, procedures and quality control that shall be required for cast-in-place concrete.

#### 1.02 SUBMITTALS

##### A. Concrete

1. CONTRACTOR shall submit *with the Bid Proposal* laboratory reports indicating that the supplier's concrete ingredients meet requirements specified.
2. CONTRACTOR shall submit *before use of cast-in-place concrete in WORK* design mixes and laboratory test reports indicating that the concrete ingredients and proportions will result in concrete mixes meeting requirements specified.

##### B. Batch Tickets

CONTRACTOR shall submit, *with each batch delivered*, delivery tickets from the concrete supplier setting forth the following information:

1. Name of Supplier
2. Name of batching plant and location
3. Date
4. Serial number of ticket
5. Truck number and batch number
6. Contract number and location
7. Volume of concrete (cubic yards)
8. Maximum size of aggregate
9. Type and brand of cement
10. Weight of cement
11. Maximum size of aggregate
12. Weights of fine and coarse aggregates
13. Types and amounts of admixtures
14. Weight of water, or, alternatively, the water:cement ratio

#### 1.03 RELATED WORK

- A. Section 0250: Mine Closures
- B. Section 0252: Concrete Reinforcement
- C. Section 0253: Bat Gate & Shaft Grate Installation
- D. Section 0254: Polyurethane Foam Mine Closures

#### 1.04 QUALITY ASSURANCE/DESIGN CRITERIA

##### A. Portland Cement Concrete Mixture

Concrete for closures and structural slabs shall have a minimum compressive strength of 3,000 psi in 28 days. The concrete shall be proportioned in accordance with ACI 211. The type of

cement used shall be Portland, Type II (ASTM C150). Air entrainment shall be furnished in all concrete. Air content shall be 5% + 1%.

B. Formwork

As outlined in ACI 301, Chapter 4.

C. Reference Standards (Latest Editions)

1. ACI 211 Recommended Practice for Selecting Proportions for Normal Weight Concrete
2. ACI 301 Structural Concrete for Buildings
3. ACI 302 Guide for Concrete Floor and Slab Construction
4. ACI 304 Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
5. ACI 305 Recommended Practice for Hot Weather Concreting
6. ACI 306 Recommended Practice for Cold Weather Concreting
7. ASTM C 31 Standard Method of Making and Curing Concrete Test Specimens in the Field
8. ASTM C 33 Specification for Concrete Aggregates
9. ASTM C 39 Test for Compressive Strength of Cylindrical Concrete Specimens
10. ASTM C 94 Specification for Ready-Mixed Concrete
11. ASTM C 150 Specification for Portland Cement
12. ASTM C 172 Sampling Fresh Concrete
13. ASTM C 494 Specification for Chemical Admixtures for Concrete

PART 2 – PRODUCTS/MATERIALS

2.01 CEMENT

Cement shall be Type II Portland cement, conforming to ASTM C 150, unless otherwise approved by the OWNER.

2.02 FINE AND COARSE AGGREGATE

Shall conform to ASTM C 33

2.03 WATER

Water shall be potable.

2.04 ADMIXTURES

- A. Chemical Admixtures: ASTM C 494
- B. Calcium Chloride will not be permitted.

2.05 FORMWORK

Form ties, fabricated so that portion remaining in the structure is at least two inches back from concrete surface.

PART 3 - EXECUTION

3.01 FORMWORK

- A. Forms shall be provided for all concrete except where instructed by the OWNER.

- B. Form surfaces which will be in contact with concrete shall be treated with an effective bond-breaking form coating. Such coating shall also effectively prevent the absorption of water from the concrete by plywood forms.

### 3.02 MIXING

- A. Concrete may be mixed at the job site or delivered as "ready mix" at the CONTRACTOR's option.
- B. If mixed on the site, equipment and mixing procedures shall conform to ACI 301, Chapter 7.
- C. If "ready mixed" concrete is used, it shall be mixed and transported in accordance with ASTM C 94.

### 3.03 HOT WEATHER CONCRETING

Conform to the requirements of ACI 305

### 3.04 COLD WEATHER CONCRETING

Conform to the requirements of ACI 306

### 3.05 PLACING

- A. Concrete shall be placed in accordance with the requirements of ACI 304, Chapter 6.
- B. Concrete shall be placed in forms in horizontal layers of 12 to 18 inches as near as possible to its final location.
- C. Each horizontal layer shall be consolidated by using a mechanical vibrator. The vibrator shall extend into the underlying layer to weld the two layers together. The use of vibrators to move concrete horizontally within the forms shall not be permitted.
- D. Concrete shall not be allowed to free fall more than 6 feet within the confines of the form work. Use tremies, hoses, chutes, or other devices where greater distance is required.

### 3.06 FIELD QUALITY CONTROL

The OWNER may require random samples for the purpose of quality control. CONTRACTOR shall take sample specimens of the concrete in cylindrical containers in accordance with ASTM C 31 at the point of deposit as follows:

1. One sampling, consisting of a minimum of three cylinders, shall be made for each batch of ready-mix concrete. At least one sampling shall be made for each 50 cubic yards of concrete or for each day of placing.
2. The samples shall be taken in accordance with ASTM C 172.
3. All three sample cylinders will be taken at the same time: one cylinder to be used for a 7-day test and two for a 28-day test. The average of the 28-day test results will be used for determining acceptance.
4. The 7-day, and 28-day tests shall be performed in accordance with ASTM C 39.

### 3.07 CURING

Comply with the requirements of ACI 301.

### 3.08 PATCHING

All damaged and honeycombed areas shall be repaired in accordance with ACI 301, Chapter 9.

### 3.09 FINISH

A. Formed Surfaces - After removal of forms, patch tie holes and defects. Remove fins from surfaces.

B. Unformed Surfaces - Screed surfaces to indicated dimensions.

### 3.10 CONSTRUCTION JOINTS

A. Before placement of fresh concrete, CONTRACTORS shall clean reinforcing steel, welded wire fabric and joint surfaces of hardened concrete.

B. Construction joints shall be prepared and bonded as provided in Section 6 of ACI 301 for elevated slabs and ACI 302 for slabs on grade.

## PART 4 - MEASUREMENT AND PAYMENT

Measurement and payment for cast-in-place concrete will be per the BID PRICE per mine site in Section 0250: Mine Closures.

END OF SECTION 0251

## **0252 Concrete Reinforcement**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

Concrete reinforcement is used in various parts of the WORK, described in Part 1 of Section 0251: Cast-in-Place Concrete. This section describes the requirements for concrete reinforcement in concrete structures. Placement of concrete reinforcement shall be as shown on the Drawings.

#### **1.02 RELATED WORK**

- A. Section 0250: Mine Closures
- B. Section 0251: Cast-in-Place Concrete

#### **1.03 QUALITY ASSURANCE**

Reference Standards (Latest Editions)

- |            |                                                                                    |
|------------|------------------------------------------------------------------------------------|
| ACI 318    | Building Code Requirements for Reinforced Concrete                                 |
| ASTM A 615 | Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement |

### **PART 2 - PRODUCTS/MATERIALS**

- 2.01 Reinforcing steel shall be made from plain or deformed new billet stock and shall conform to ASTM A 615, Grade 60.
- 2.02 Reinforcement chairs, hangers, spacers, or other supports shall be non-corrosive.
- 2.03 All reinforcement shall be free from oil, mill scale and excessive rust, or other coatings that will destroy or reduce bond.

### **PART 3 - EXECUTION**

- 3.01 Reinforcement shall be accurately formed to the dimensions indicated.
- 3.02 All bars shall be bent cold and shall not be straightened in a manner which will injure the material.
- 3.03 Bars shall be spaced and positioned as shown on the Drawings.
- 3.04 Three (3) inches of concrete cover shall be provided for main reinforcement.
- 3.05 Reinforcement shall be spliced and tied in accordance with the requirements of ACI 318, and as shown in the Drawings.

### **PART 4 - MEASUREMENT AND PAYMENT**

No separate measurement and payment shall be made for concrete reinforcement. OWNER will ascertain that concrete reinforcement meets the requirements of this section and is sized and placed in accordance with the Drawings and these Specifications. OWNER's approval for pay items including concrete reinforcement will require the OWNER's acceptance and approval of the concrete reinforcement.

END OF SECTION 0252

## **0253 Bat Gate & Shaft Grate Installation**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. CONTRACTOR shall construct steel gates or grates in the portals and shafts as specified in Section 0300: Specific Site Requirements and in accordance with this section. The purpose of the gates and grates is to maintain airflow and wildlife access while preventing human access into the mine.
- B. This work shall consist of fabricating and installing steel bat gate or rebar shaft grate closures within specific mine adits and shafts. Work shall include excavation of loose material and trimming of the mine opening; drilling, placing, and grouting anchors; concrete footers; and fabrication, installation, and welding of steel gates or grates in accordance with these specifications. Refer to the Drawings for construction details.
- C. The dimensions shown on Standard Drawings are generic and based upon a standard design. Actual dimensions will be determined by the mine opening size and site preparation. The CONTRACTOR shall make the necessary measurements and adjustments to ensure that a competent gate or grate is constructed that will prevent human access. Very large or irregularly shaped openings may require custom fitting or modification of the generic design in consultation with the OWNER. Minor variations in the location of the bat gate will be allowed so that the CONTRACTOR may select a stable location for the bat gate, with the approval of the OWNER.

#### **1.02 RELATED WORK**

- A. Section 0250: Mine Closures
- B. Section 0251: Cast-in-Place Concrete
- C. Section 0252: Concrete Reinforcement
- D. Section 0254: Polyurethane Foam Mine Closures
- E. Section 0300: Specific Site Requirements

### **PART 2 – PRODUCTS/MATERIALS**

#### **2.01 BAT GATE STEEL COMPONENTS**

All steel used for bat gate closure construction shall be 12-14% manganese steel (Manganal® steel or equivalent). Round stock used for horizontal crossbars, perimeter supports, anchor pins, and supplemental vertical bars shall be #8 bars (1 inch diameter). Flat stock used for vertical supports, roof anchor plates, gussets, and lock boxes shall be 4" x ½" plate. Welding rod shall be suitable for use on manganese steel.

#### **2.02 REBAR SHAFT GRATE STEEL COMPONENTS**

Steel used for shaft grate crossbars and anchor pins shall be mild steel rebar meeting the requirements of ASTM A 615. Bars shall conform to Grade 60. Rebar used for shaft grate crossbars and anchor pins shall be #8 bars (1 inch diameter).

#### **2.03 CORRUGATED METAL PIPE (CMP)**

Corrugated metal pipe shall be fabricated of 16 gauge (0.064-inch thickness) steel and shall have 2-inch by 2-inch corrugations. Fabrication shall be riveted (5/16-inch/ single rivet), welded, or helical. Continuous lap seam and continuous welded seam shall be considered equivalent in strength to two

fasteners per corrugation seam. Fabrication must meet AWS "Structural Welding Codes" and AASHTO 1977 Standard Specifications for Highway Bridges. CMP galvanization shall meet the requirements of ASTM A386 for assemble products for ASTM A123 for rolled, pressed, and forged steel shapes. Galvanizing repair paint shall meet specification MIL-P-21035. All pipe couplings and hardware shall be compatible with CMP.

#### 2.04 CONCRETE REINFORCEMENT

Steel used for concrete reinforcement shall be mild steel rebar meeting the requirements of ASTM A 615. Bars other than ties shall conform to Grade 60. Ties shall conform to Grade 40 or Grade 60. Rebar used for concrete reinforcement shall be #4 bars (½ inch diameter). All reinforcing steel shall be free from rust, scale, or other coating that will destroy or reduce the bond with the cement-grout.

#### 2.05 CEMENT-GROUT

Cement-grout shall consist of a mixture of sand, aggregate, and cement capable of attaining a compressive strength of 3,000 psi in 28 days. Maximum size of coarse aggregate shall be ¾ inch.

#### 2.06 EPOXY RESIN GROUT

Epoxy resin grout shall conform to the requirements of ASTM C881, Type IV, grade 3.

#### 2.07 PADLOCKS

Padlocks for locking bat gates shall have a minimum 3/8" diameter shackle. Padlocks shall be heavy duty, such as the Master® No. 5D or equivalent. All locks shall be keyed the same.

### PART 3 - EXECUTION

#### 3.01 GENERAL

CONTRACTOR shall construct steel gate closures in adits and steel grate closures in shafts as specified below, as shown on the Drawings, and as specified in Section 0300: Specific Site Requirements. The final design, fabrication, and erection of the gate or grate closure shall conform to the guidelines established with these specifications and the drawings. The final design shall be the responsibility of the CONTRACTOR, subject to OWNER's approval.

#### 3.02 BAT GATE INSTALLATION

- A. Location. Variation of the bat gate closure location will be allowed so that the CONTRACTOR can select a suitable location as approved by OWNER. Parameters for suitable location shall be as follows:
1. Select an area in which competent rock is found in the roof, ribs, and floor of the adit.
  2. Utilize smooth, non-fractured faces in the ribs and roof, where possible, such that the gate can be "keyed" into the rock to provide more strength and integrity to the closure.
  3. Locate the bat gate closure a minimum of three feet into the adit or as approved by the OWNER.
- B. Preparation. The CONTRACTOR shall scale down the roof and ribs of the adit, removing any loose rock from the area in which the bat gate closure is to be constructed and along access to the closure. The portal shall be cleaned and shaped as directed by OWNER. Historic structural features shall be preserved and maintained.

- C. The concrete footer shall be poured in a trench excavated to the dimensions shown on the Drawings. Concrete shall be reinforced with #4 (½-inch) rebar on 12-inch centers with a minimum 2-inch concrete cover on all surfaces. Concrete shall not be poured until the gate steel and rebar have been installed. Concrete shall be mounded as necessary so that the gap between the top of the footer and the bottom crossbar of the gate is no larger than 4 inches. Forms will not be required unless called for by sloping conditions or deep unconsolidated floor material. If used, forms shall be sufficiently braced to prevent movement or dislocation during or after setting the gate steel and rebar in place. Forms shall be removed upon completion of the closure. Concrete construction shall be done in accordance with Section 0251: Cast-In-Place Concrete and Section 0252: Concrete Reinforcement.
- D. Anchor pins shall be doweled into the adit walls a minimum of 12 inches and grouted into place with either cement or epoxy resin. The CONTRACTOR shall determine the means of drilling into the rock and submit the method to the OWNER for approval prior to the start of the drilling operations. Anchor pins shall protrude from the adit ribs to attach the perimeter supports and roof anchor plates. Anchor pins shall be fillet welded to the perimeter bars. Roof anchor plates shall be 4 inches by 8 inches and welded with a continuous bead to the top of the vertical supports and the anchor pins. There shall be at least two anchor pins on each side of the adit and at least one pin for each roof anchor plate. Anchor pins shall be located in competent rock affording the most secure placement. Anchor plate and pin locations and dimensions may be adjusted to fit site conditions with approval of OWNER.
- E. Perimeter bars shall be fillet welded to the anchor pins to provide a continuous steel lining on the adit ribs. Perimeter bars shall be bent or cut into segments to conform closely to irregular surfaces, with a maximum gap of 6 inches between the rib and the bar. If cut into segments, ends of segments shall be butt-welded to each other to form a continuous piece. Perimeter bars shall be installed on the outby side of the gate or as directed by OWNER. However, the perimeter bar at the position of the removable locking bar (crossbars 4 and 5, perimeter bar welded to crossbars 3 and 6) must be on the inby side of the gate.
- F. The vertical supports shall have 1⅓-inch diameter holes at the required spacing to accept the horizontal crossbars with a minimum of play. Vertical supports shall extend into the concrete footer and shall be positioned as close to the adit ribs as possible, with a maximum gap of 16 inches between the rib and the vertical support. Vertical supports shall be plumbed as directed by OWNER. The tops of the vertical supports shall be welded to the roof anchor plates with a continuous bead.
- G. Horizontal crossbars below a height of 48 inches above the top of the footer shall be spaced on 5-inch centers for a maximum gap between bars of 4 inches. Horizontal crossbars over 48 inches high shall be spaced on 6½-inch centers for gaps between bars of 5½ inches. With vertical supports and supplemental vertical bars in place, no opening in the bars below 48 inches high shall be larger than 24 inches by 4 inches. There shall be at least one opening in the top tier of bars that is 24 inches by 5½ inches, but no opening in the bars above 48 inches high shall be larger than this. Ends of horizontal crossbars shall be installed to within one inch of the adit rib surface. Except for the removable locking bar, horizontal crossbars shall be fillet welded at each intersection with the perimeter bars and supplemental vertical bars and spot welded at each intersection with the vertical supports.
- H. Supplemental vertical bars shall be installed on the outby side of the horizontal crossbars on 24½-inch centers as necessary so that no gate opening is greater than 24 inches wide. Supplemental vertical bars shall be fillet welded to horizontal crossbars at each intersection. Supplemental vertical bars shall extend down to the concrete footer.

- I. The lock box shall be constructed to the shape and dimensions shown on the drawings with fillet welds at all joints. The box shall be welded onto the vertical support at the position of the fourth and fifth horizontal crossbars from the bottom. Tolerances for the lock mechanism construction shall be sufficient to prevent vandals from accessing the padlock with common hand tools. Supplemental shields may be required to protect the mechanism.
- J. The fourth and fifth horizontal crossbars shall be welded together with spacers and gussets to form a single removable, lockable unit as shown on the Standard Drawings. Gussets 4 inches square shall be fillet welded to the crossbars and spacers on both sides with a continuous bead. The lockbox ends of the crossbars shall be shaped as shown on the drawings to accept the padlock. The free ends of the crossbars of the removable unit, when installed, shall not extend beyond the vertical support more than 18 inches. Any remaining gap between the ends of the removable crossbars and the adit rib shall be filled with immovable crossbars and vertical bars as required, following the same pattern as the rest of the gate.
- K. Upon completion, soil or rock excavated for the closure preparation and footer trench shall be replaced or scattered to blend with the surroundings. The portal area shall be cleared of all construction materials, formwork, and construction-generated trash and debris. The site shall be left with a clean and finished appearance.
- L. All horizontal crossbars shall be continuous. Joints, if required, shall be butt joints, with bar ends welded to each other to form a continuous piece.
- M. Additional bars or plates may be required to close gaps due to irregularities in the adit rib surface or as supplemental supports, gussets, or lock shields.
- N. All field welds shall be in accordance with the requirements of the American Welding Society (AWS) D.1.1.
- O. Variation in the generic design or custom fitting may be required to accommodate site-specific conditions. Section 0300: Specific Site Requirements may specify alternate materials, dimensions, or design modifications for specific mine openings.

### 3.03 REBAR SHAFT GRATE INSTALLATION

- A. Location. Variation of the location of the shaft grate will be allowed so that CONTRACTOR can select a suitable location for the shaft grate, with approval of OWNER. Parameters for suitable location of the rebar shaft grate shall be as follows:
  - 1. Select an area in which competent rock is found around the collar of the shaft, if possible.
  - 2. Select an area with minimum irregularities in the collar to avoid excessive site preparation for the construction of the grade beam around the collar.
  - 3. Locate the grade beam at a reasonable distance (typically 3 feet minimum, or as directed by the OWNER) from the shaft collar to reduce the possibility of collapse of the collar of the shaft.
  - 4. Grates at shafts with competent rock collars where grade beams are omitted shall be installed at grade or inside the opening to a maximum depth of 3 feet below grade.
- B. Preparation. CONTRACTOR shall excavate to solid rock where the grade beam is to be constructed where the depth does not exceed two feet to bedrock. Any mud, clay, moss, or other materials where the grade beam is to be constructed which would be deleterious to the integrity of the grate or grade beam and would not allow good bonding of the concrete to the

rock shall be removed. Historic structural features shall be preserved and maintained. Drainage shall be provided for any water that would accumulate on either side of the grade beam. Excavated materials shall be set aside for replacement later.

- C. Where possible, concrete grade beams shall be constructed on competent foundation rock which is not friable, subject to deterioration, or otherwise unacceptable and the foundation rock is approved by OWNER. The grade beam shall be a minimum of 12 inches high and 12 inches wide. Grade beams for grates larger than 15 feet in either dimension (measured from the interior sides of the grade beams) shall be a minimum of 18 inches high and 12 inches wide, or as directed by OWNER. Grade beams shall be pinned to the foundation rock using #8 rebar anchor pins installed a minimum of 18 inches into the rock, grouted, and set 2 inches below the upper surface of the grade beam. Rebar anchor pins shall be located on 8-foot centers maximum.
- D. Forms will be required for all grade beams. Forms shall be sufficiently braced to prevent movement or dislocation during or after setting the grate steel and rebar in place. Concrete shall be reinforced with #6 (¾-inch) rebar as shown on the Drawings. Concrete shall not be poured until the grate steel and rebar have been installed. Concrete shall be poured in one continuous operation and shall be free of cold joints. The grade beam shall be free of any voids within the beam structure and shall be 100 percent concrete construction. Concrete construction shall be done in accordance with Section 0251: Cast-In-Place Concrete and Section 0252: Concrete Reinforcement.
- E. Grates larger than 15 feet in either dimension (measured from the interior sides of the grade beam) shall be constructed with a supplemental support for the grate. This support shall be a mild steel W8 x 15 I-beam centered in the long-dimension sides, and running across the short dimension of the grate. The I-beam support shall be positioned directly beneath the crossbars and will be embedded in the grade beam 4 inches at each end. The height of the grade beam will be adjusted as needed to accommodate additional height of the I-beam support.
- F. Crossbars shall be installed in the grade beams running each direction on 8-inch centers to form a square grid. Crossbars shall be positioned a minimum of 4 inches below the top surface of the grade beam. Crossbars running the short dimension of the grate shall be placed underneath, except where there is a supplemental I-beam support. Each intersection of the crossbar grid shall be fillet welded on the upper side.
- G. In shafts with competent collars, grade beams may be omitted with approval of the OWNER. Rebar anchor pins shall be installed a minimum of 12 inches into the collar. At least 4 anchor pins shall be installed, with a maximum spacing of 8 feet between pins. Support bars shall be welded to the anchor pins. Grate crossbars shall be installed on the support bars, running each direction on 8-inch centers to form a square grid. Each intersection of the crossbar grid and each contact with the support bars shall be fillet welded on the upper side.
- H. Crossbars shall be continuous. Lap joints, if required, shall be a minimum of 5 inches with continuous fillet welds along both sides of the lap joint.
- I. All field welds shall be in accordance with the requirements of the American Welding Society (AWS) D.1.1.
- J. Upon completion, the collar areas shall be cleared of all construction materials, formwork, and construction-generated trash and debris. Material excavated for the grade beam preparation shall be backfilled against the beam. Excess material shall be blended into the surrounding area. The site shall be left with a clean and finished appearance.

- K. Variation in the generic design or custom fitting may be required to accommodate site-specific conditions. Section 0300: Specific Site Requirements may specify alternate materials, dimensions, or design modifications for specific mine openings.

### 3.04 CMP BAT GATE (ADIT GATE) INSTALLATION

- A. Bat gates shall be installed in CMP culverts in unstable locations where gates cannot be anchored directly to competent rock. Culverts may be round or elliptical. Culvert diameters and lengths will be specified in Section 0300: Specific Site Requirements. Culverts will typically be the largest diameter that will fit the opening. Culverts will typically extend inby the brow to competent rock or a minimum distance of twice the adit height. Culverts will typically extend outby the brow 2 feet past the backfill line.
- B. Adit Preparation. The CONTRACTOR shall scale down the roof and ribs of the adit, removing any loose rock from the area in which the CMP bat gate closure is to be constructed and along access to the closure. The portal shall be cleared of obstructions, trimmed, and shaped as directed by OWNER to receive the culvert. Historic structural features shall be preserved and maintained.
- C. Pipe Bed. A pipe bed of sand, crushed rock, fine mine dump material (minus 3 -inch) or equivalent shall be placed a minimum 4 inches thick on the adit floor. The bed shall have a constant grade and shall provide continuous support for the culvert along its entire length. Where the height of the adit is substantially greater than the culvert diameter, unclassified fill may be placed in the adit to raise the culvert to the desired elevation. Pipe bedding will then be placed on the unclassified fill.
- D. Culvert Installation. The culvert shall be slipped into position in the adit onto the pipe bed. The culvert shall be supported by bedding along its entire length when in place. Care shall be taken to avoid buckling or joint separation during handling and subsequent backfilling operations.
- E. Bat Gate Installation. The bat gate may be installed before or after placement of the culvert in the adit. The bat gate shall be installed as described in Part 3.02 above, with the following changes: the vertical supports and horizontal crossbars extend through the culvert a minimum of 6 inches and the perimeter bars are placed on the outside of the culvert. All crossbars shall be spaced on 5-inch centers for a maximum gap between bars of 4 inches. No opening in the bars shall be larger than 24" x 4".
- F. Headwall. A concrete headwall shall be constructed around the culvert and bat gate. The headwall shall be a minimum of 12 inches thick and shall extend out from the culvert a minimum of 12 inches in each direction. The headwall shall be centered on the bat gate. The concrete shall be reinforced with a single mat of #4 (½-inch) rebar on 12-inch centers. Concrete shall not be poured until the gate steel and rebar have been installed. Concrete shall be poured in one continuous operation and shall be free of cold joints. The headwall shall be free of any voids and shall be 100 percent concrete construction. Concrete construction shall be done in accordance with Section 0251: Cast-In-Place Concrete and Section 0252: Concrete Reinforcement.
- G. Backfill. The gap between the culvert and the adit walls shall be completely backfilled for the full length and full circumference of the culvert. Polyurethane foam (PUF) shall be used to plug the interior reach of the gap. PUF application shall be in accordance with section 0254: Polyurethane Foam Mine Closures. PUF can be injected through holes drilled in the culvert every three feet to reach inaccessible areas. Worker area shall be adequately ventilated during PUF installation. Unclassified fill shall be used to fill the exterior reach of the gap. Earthen backfill shall extend a minimum of 4 feet inby the brow. Backfill shall be placed by hand and tamped. Backfill outby the brow may be placed by machine and shall be placed in 12-inch lifts

and compacted until reaching the top of the pipe. The area around the culvert and headwall shall be backfilled to blend with the adjacent slopes. Final grade shall provide positive drainage away from the adit.

- H. Upon completion, the area shall be cleared of all construction materials, formwork, and construction-generated trash and debris. The site shall be left in a clean and finished appearance.
- I. Variations in the generic design or custom fitting may be required to accommodate site-specific conditions. Section 0300: Specific Site Requirements may specify alternate materials, dimensions, or design modifications for specific mine openings.

#### PART 4 - MEASUREMENT AND PAYMENT

##### 4.01 BASIS OF PAYMENT

Basis of payment for the WORK will be on the BID PRICE per opening for completion of all the WORK as described in this Section. Breakdown of the WORK into unit prices for individual mine openings shown in the Bid Schedule will be used in determining partial payment or adjustment of the total BID PRICE for this Section as the WORK progresses.

##### 4.02 MEASUREMENT

Measurement for mine closures will be on the BID PRICE per mine opening. The BID PRICE shall include all costs for labor, materials, equipment and all other items necessary for completion of the work as described in this section. Measurement will be based on and compared to the dimensions and quantities identified on the bid sheets, these Specifications and Drawings. The OWNER will request intermediate measurements to determine progress of the WORK.

##### 4.03 PAYMENT

- A. Payment for mine closures will be for each mine site at the BID PRICE. Payment will only be for those closures which are complete, accepted, and approved by the OWNER. No partial payments will be made for individual mine openings.
- B. Payment at the UNIT PRICE for additional quantities will be made for mine closures when final quantities are greater than 15 percent in excess of the estimated quantities shown on the bid sheet for a given mine site. Such unit price payment will require proof of additional quantities provided by the CONTRACTOR and approval of the OWNER, and shall be full compensation for the approved additional grate quantity. Reduction of payment for lesser quantities of installed grate will also be made by the OWNER for quantities greater than 15 percent below the estimated quantity shown on the bid sheet for a given mine. Such UNIT PRICE adjustment will require approval of the OWNER and will be full compensation for approved additional or reduced mine closure quantities.

END OF SECTION 0253

## 0254 Polyurethane Foam Mine Closures

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

The polyurethane foam (PUF) closure of adits consists of installing a bulkhead form, installing PUF to specifications, and backfilling over the PUF with random fill. In shafts, the closure work consists of installing a bottom form, installing PUF to specifications, installing drainage material, topping the PUF with a layer of concrete, and backfilling over the PUF to the specified level with random fill. For shafts, one ventilation/drainage pipe is required. Refer to the drawings for construction details.

#### 1.02 SUBMITTALS

CONTRACTOR shall submit *with the Bid Proposal* the proposed construction procedures, including a description of the form materials to be used and the foam application equipment or method.

#### 1.03 RELATED WORK

- A. Section 0250: Mine Closures
- B. Section 0251: Cast-In-Place Concrete
- C. Section 0252: Concrete Reinforcement
- D. Section 0300: Specific Site Requirements

### PART 2 - PRODUCTS/MATERIALS

#### 2.01 FORMWORK

- A. The forms and cross members may consist of any commonly available building materials capable of sustaining the initial lift of two to four feet of PUF. Examples of acceptable forms and cross members include but are not limited to, the following:

- Cross-Member & Bottom Form

- Rebar & Plywood

- 2x4s & Cardboard or Chicken Wire

- Dowels & Paneling

- Cardboard Tubes & Carpeting

- Blocks of PUF (generated onsite)

- Waterbed Mattresses (inflated remotely in the shaft with a hose and air compressor)

- B. Any combination of the above noted materials that achieves the required performance will be acceptable. Alternate bottom forms will be acceptable upon approval by the OWNER.
- C. Any breach in the bottom form caused by vandals or rock fall is required to be repaired before the arrival of the PUF applicators to the site. The CONTRACTOR is responsible for the integrity of the bottom form, and the loss of any polyurethane should it fail.

#### 2.02 POLYURETHANE FOAM (PUF)

PUF is required to have a minimum installed density of 1.85 pounds per cubic foot (pcf). PUF characteristics shall conform to the minimum following standards:

| PUF CHARACTERISTIC       | STANDARD          | SPECIFIED IN |
|--------------------------|-------------------|--------------|
| Density                  | 1.85 pcf, nominal |              |
| Closed cell content      | 90%               | ASTM D-2856  |
| Compressive strength     | 25 psi            | ASTM D-1621  |
| Water absorption         | 1% by volume      | ASTM D-2127  |
| Exothermic Reaction Rate | Low               |              |
| Fire Resistance          | Low               | ASTM D-1692  |

Polyurethane foam used may not contain any CFC's (chlorinated fluorocarbons).

### 2.03 PROPORTIONING UNIT

- A. The proportioning unit shall be capable of attaining a minimum temperature of 125°F. The proportioning unit shall be Gusmer Model H-11 or equivalent. For remote sites, or with approval of the OWNER, smaller capacity proportioners will be acceptable. In this event, the proportioner shall be the Gusmer FF, or equivalent.
- B. Minimum heated hose length from proportioner to gun shall be 80 feet. The hose shall maintain or increase component temperature from the proportioner. Longer heated hose lengths may be required depending upon distance from the proportioning unit to the reclamation site.

### 2.04 APPLICATION GUN

The application gun shall be capable of mixing plural components in the proper ratio at the minimum acceptable output of four pounds per minute. The gun shall be a Gusmer AR mechanically self-cleaning design, or equivalent.

### 2.05 PREPACKAGED, PRE-PROPORTIONED PUF KITS

PUF products consisting of factory prepared kits that are designed to combine and dispense pre-measured quantities of components in the proper ratios may be used in place of an onsite proportioning unit and application gun, with the approval of OWNER. One such product is the foam closure bag manufactured by Foam Concepts Inc. (see Part 2.10 below). PUF kits shall be used according to the manufacturer's specifications.

### 2.06 CEMENT PLUG

Concrete for the cement plug shall have a minimum compressive strength of 3,000 psi in 28 days. The concrete shall be proportioned in accordance with ACI 211. The type of cement used shall be Portland, Type II (ASTM C150). Air entrainment shall be furnished in all concrete. Air content shall be 5%± 1%. Water/cement (W/C) ratio is approximately 0.49 with minimum cement content of 564 lbs/CY. Concrete mixed at the jobsite shall be in accordance with ACI 301, chapter 7. Ready mix concrete shall be in accordance with ASTM C94.

### 2.07 FILTER CLOTH

The filter cloth, either woven or non-woven at the CONTRACTOR's option, shall have a minimum thickness of 15 mil in accordance with ASTM D-1777 and a minimum permeability of  $10^{-2}$  cm/sec, such as Fibertex 150® manufactured by Crown Zellerbach or equivalent approved by OWNER. Prior to installation, the CONTRACTOR shall provide the OWNER with documentation that the filter cloth furnished meets the chemical, physical and manufacturing requirements of this Section.

## 2.08 VENTILATION/DRAIN PIPE

The ventilation/drain pipe shall consist of 2-inch diameter steel pipe. Plastic pipe shall not be used because the heat of the foam reaction can melt it.

## 2.09 RANDOM FILL MATERIAL

Random fill material shall consist of native, on-site soils and sandstone rock. The types of miscellaneous fill material to be used shall be approved by the OWNER prior to initiating the work.

## 2.10 SUPPLIERS OF PUF

Potential suppliers of polyurethane foam (PUF) are:

Foam Concepts, Inc.  
309 NE 9th Ave  
Grand Rapids, MN 55744  
(800) 556-9641  
(218) 327-1196 FAX  
E-mail: [sales@foamconceptsinc.com](mailto:sales@foamconceptsinc.com)  
<http://www.foamconceptsinc.com>

Progressive Marketing Group  
1906 Highway 71 North  
P.O. Box 860  
Okoboji, Iowa 51355  
(712) 332-9013  
(800) 373-2593  
(712) 332-9653 FAX  
(800) 398-2762 FAX  
(800) 806-1171 Dennis Gustafson  
E-mail: [pmgroup@rconnect.com](mailto:pmgroup@rconnect.com)  
Vendor of Equipmentless Foam Sealant™.

Utah Foam Products  
Ernest Wilson Co.  
3609 South 700 West  
Salt Lake City, Utah 84119  
Contact: Dennis Beckstead  
(801) 269-0600 Utah Foam Products  
(801) 265-9444 Ernest Wilson Co.  
(801) 269-0620 FAX  
E-mail: [info@utahfoam.com](mailto:info@utahfoam.com)  
UFP is a supplier of raw materials. EWC is the contracting arm of the company.  
Ron Walker  
Azco Construction  
2055 West US Highway 50 East  
Penrose, Colorado 81240-9575  
(719) 372-6872  
General contractor with PUF equipment.

A Urethane Service and Supply  
2200 West 2300 South  
West Valley City, Utah 84119  
(801) 974-0995  
(801) 974-3058 FAX  
E-mail: [urethane@qwest.net](mailto:urethane@qwest.net)  
Roofing contractor.

T&W Wilson Spray Urethane  
7200 South 2700 West  
West Jordan, Utah 84084  
Contact: Terry Wilson  
(801) 566-1020  
(801) 566-6620 FAX  
Roofing contractor.

Mine Seal, LLC  
P.O. Box 231329  
Las Vegas, NV 89123  
(888) 732-5783  
(888) 531-6883 FAX  
Mine closure consulting firm.  
[www.mine-seal.com](http://www.mine-seal.com)

Most roofing contractors that apply PUF roofing should be capable of providing the appropriate product for mine closure use.

These names are provided for the convenience of bidders. Other vendors may exist. The OWNER does not endorse or warrant the reliability or product of any of these vendors.

### PART 3 - SAFETY

#### 3.01 WORKER PROTECTIONS

- A. PUF shall be applied by workers wearing organic respirator masks and safety glasses or goggles. State or Federal regulations requiring additional equipment shall supersede these specifications.
- B. There shall be no welding, smoking, or open flame within 100 feet of PUF application. A minimum 15-pound, class ABC fire extinguisher must be on site at the mine opening where the PUF is being applied during foam application.
- C. Oxygen Content of Working Area
  - 1. A flame safety lamp or oxygen meter must be used to test air before and during installation of the bottom forms. The flame safety lamp or oxygen meter will be supplied by the CONTRACTOR and operated only by the Certified Person. Refer to Section 0200, Part 1.04.C and Section 0250, Part 1.04.
  - 2. Oxygen Meter. The oxygen meter shall be a National Mine Service (NMS) OX231 oxygen meter or equivalent. The oxygen meter shall continuously monitor oxygen levels and have an audible warning. If the oxygen content falls below 19%, all personnel must withdraw from the working area in the mine until the oxygen content increases to safe levels.
  - 3. Any remedy for increasing oxygen content of the working area and/or providing ventilation from the surface must be determined in consultation with the OWNER and the Certified Person.

#### 3.02 MATERIAL HANDLING AND TRANSPORT

- A. Materials shall be stored per the manufacturer's specifications. All safety precautions outlined by the Polyurethane Division of the Society of Plastics Industries, NFPA, OSHA, EPA and the manufacturer's Material Safety Data Sheets (MSDS) shall be observed. MSDS and technical data sheets shall be on-site and available at all times.
- B. The CONTRACTOR shall follow all applicable State and local regulations for transport and use of PUF and chemicals required for cleanup. The CONTRACTOR shall also obtain any necessary permits for transportation. The CONTRACTOR shall be aware of agencies and jurisdictions requiring notification in the event of a component leak or spill. In the event of a leak or spill, the CONTRACTOR shall notify the appropriate parties.

## PART 4 - EXECUTION

### 4.01 SHAFT CLOSURE INSTALLATION

#### A. CLEARING DEBRIS

Clear debris other than fixed, attached or permanent structures from the shaft before PUF is installed *as directed by the OWNER*. Historic structural features shall be preserved and maintained. Any historic debris removed shall be placed neatly to the side of the opening.

#### B. FORMWORK

1. The formwork shall be installed below the surface of the shaft at the bottom of the foam depth level. The depth of foam required to plug a shaft shall be determined by the following formulas, where "a" is the smaller dimension of a rectangular shaft opening and "b" is the larger dimension:
  - a. for shafts where  $a = b$ , the depth of foam should be:  $2a$ .
  - b. for shafts where  $a < b < 3a$ , the depth of foam should be:  $2a + \frac{1}{2}(b-a)$
  - c. for shafts where  $b > 3a$ , the depth of foam should be:  $3a$ .
2. Cross-member supports may be placed at an angle not more than 20 degrees from horizontal as long as both ends are seated in the shaft. The bottom form shall be set over the cross-members. Formwork may be suspended by ropes to avoid placing personnel inside the shaft.
3. Bottom forms shall be completed prior to application of any polyurethane foam. Depending on the particular chemical components and application system used, foam reactions times will vary. PUF may still be a liquid when it hits the bottom form. Experience has shown that there can be a substantial loss of PUF to leakage through holes in the form or gaps between the edge of the form and the shaft walls in the 10-20 seconds it takes for the PUF to expand and seal the bottom. The CONTRACTOR is responsible for the integrity of the bottom form and for the loss of any polyurethane should it fail.
4. The installed depth to bottom form shall be indicated on the as-built drawings for polyurethane foam closures, if required.

#### C. VENTILATION/DRAIN PIPE

1. The ventilation/drain pipe shall be placed over a portion of the bottom form unobstructed by cross-members. The ventilation/drain pipe shall be open to the shaft after installation of the foam. The ventilation/drain pipe shall be supported by a tripod or other load-bearing device such that the load is not placed on the bottom form.
2. The 2-inch steel ventilation/drain pipe shall be installed into the approximate center of the PUF installation and shall extend vertically to the lines and grades as shown on the Standard Drawings.
3. The steel ventilation/drain pipe shall extend up through the entire PUF and concrete plug installation to provide ventilation and a watercourse through the entire structure. The 2-inch steel pipe shall be cut off level at the top of the concrete plug.

#### D. POLYURETHANE FOAM (PUF) APPLICATION

1. PUF shall be applied in lifts with a maximum rise of 1.5 feet. Installed PUF lifts shall pass through the tack free stage before applying the next lift. At no time shall sprayed or poured PUF cut into rising foam. The PUF shall be applied in such a manner that the entire void is filled, and that shadow zones or voids are not created during PUF application, and does not raise the temperature to unsafe levels. At the discretion of the OWNER, thermocouples may be used to monitor exothermic generation. PUF application shall cease if heating or off-ratio foam is observed. The CONTRACTOR shall remedy off-ratio foam and demonstrate proper quality PUF to the OWNER before application resumes. See Part 4.03 below for characteristics of off-ratio foam.
2. The surface of the void to be filled shall be as free as possible of grease and standing water. PUF shall not be applied to surfaces with running water. Remedial action for such situations shall be specified by the OWNER. Polyurethane foam shall not be applied directly to a debris plug, but must be applied to a bottom form of known physical and chemical properties. PUF shall not be applied during rain unless the foam is protected from interaction with water by a physical barrier.
3. If off-ratio PUF is observed, the applicator must stop, correct the imbalance and continue application with the proper ratio PUF. Correction and determination of the foam ratio shall be done on a plastic sheet away from the work area. Any lift of off-ratio PUF comprising over two percent (2%) of the intended PUF column height shall be removed. An amount of off-ratio PUF less than two percent (2%) of the specified volume may remain if allowed to cool, and if the outer perimeter of off-ratio foam is removed.
4. The CONTRACTOR shall be responsible for any lost or damaged equipment. In addition, damages or claims arising from PUF overspray shall be the responsibility of the CONTRACTOR. Under no circumstances shall foreign material be placed in the PUF unless specifically authorized by the OWNER. Non-PUF materials must be non-toxic, non-hazardous and not compromise the strength or water saturation characteristics of the PUF.
5. Upon reaching the specified grade as shown on the Standard Drawings, the CONTRACTOR shall clean up PUF operations and wait a minimum of one hour before initiating construction of the concrete plug.

#### E. CONCRETE PLUG

1. The concrete plug shall be placed directly on top of the polyurethane foam (PUF) as shown on the Standard Drawings and be one foot thick, covering the entire width of the opening. There shall be complete contact along the entire perimeter of the plug with the opening walls.
2. The CONTRACTOR shall determine the means of concrete plug placement and submit it to the OWNER for approval prior to the start of construction.
3. The top of the concrete plug shall be reasonably smooth and completed to provide drainage to the 2-inch steel ventilation/drain pipe.
4. Placement of backfill on top of the concrete plug will not be allowed until the structure has cured for a minimum of 24 hours.

#### F. FILTER CLOTH

1. The geotextile filter cloth shall be placed in all required structures in a manner acceptable to the OWNER.

2. Fabric shall be rejected at the time of installation if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage. Fabric damaged before or during the installation shall be replaced at the CONTRACTOR's expense.
3. The fabric shall be placed without stretching and shall lie smoothly in contact with the concrete plug surface. Each strip shall be continuous in width with no joints. The fabric shall be placed with overlapping seams perpendicular to the long axis of the opening. When end overlapping of strips is necessary, the joints shall be overlapped a minimum of two feet. End overlaps shall be made in the direction of the long axis of the opening. The work shall be scheduled so that not more than one day elapses between the placement of the fabric and the time it is covered with the specified material.
4. The filter cloth shall be installed over the top of the concrete plug and 2-inch PVC ventilation/drain pipe so that free drainage is possible.

#### G. RANDOM FILL MATERIAL

1. Random fill material shall consist of on-site, native materials as approved by the OWNER. Fill material shall be placed to the thickness shown on the Standard Drawings.
2. Materials for random fill material shall be placed by methods to produce a uniform mass. The first two-foot lift shall be placed by hand or bucket to lower the velocity of impact against the concrete plug. The final surface of the backfilled opening shall be mounded a minimum of one foot above the original ground. Care should be taken not to plug the drain pipe with fill material.

#### H. SITE CLEAN-UP

All construction-generated trash and debris, such as scrap materials and spilled PUF or concrete, shall be cleaned up and removed. CONTRACTOR shall avoid spraying foam at undesignated targets. Improperly applied PUF and overspray shall be removed.

#### I. MODIFIED PUF CLOSURE (RECESSED SURFACE)

The standard PUF closure design may be modified for certain shafts designated as historically significant. For these openings, the top surface of the random fill material shall be recessed inside the shaft opening to within three feet of the adjacent ground surface. The minimum thickness of the random fill layer shall be two feet. The positions of the bottom form, PUF, and concrete are lowered accordingly. The intent of the recessed fill is to maintain the original appearance of the opening while still eliminating a serious fall hazard. Shafts designated as historically significant and requiring a recessed closure are listed in Section 0300: Specific Site Requirements and/or the appendices.

### 4.02 ADIT PUF CLOSURE INSTALLATION

#### A. CLEARING DEBRIS

Clear debris other than fixed, attached, or permanent structures from the adit before PUF is installed as directed by the OWNER. Historic structural features shall be preserved and maintained. Any historic debris removed shall be placed neatly to the side of the opening.

## B. FORMWORK

1. The formwork shall be installed in by the brow of the adit to allow for a minimum foam thickness of two feet.
2. Cross-member supports may be placed at an angle not more than 20 degrees from vertical as long as both ends are seated in the adit.
3. Forms shall be completed prior to application of any polyurethane foam. Any breach in the form caused by vandals or rock fall shall be repaired prior to arrival of PUF applicators at that site. The CONTRACTOR is responsible for the integrity of the form, and the loss of any polyurethane should it fail. The installed depth to form shall be indicated on the as-built drawing for polyurethane foam closures, if required.

## C. VENTILATION/DRAIN PIPE

Designated openings shall require the installation of a drainage pipe. The drainpipe shall be located near the base of the closure within 15 inches of the intersection of the floor material in the approximate center of the closure or near a low spot along the base. The drainpipe shall extend through the base of the closure. The drainpipe shall protrude a minimum of 12 inches on either side of the seal and shall be made from 6-inch nominal diameter steel pipe. The inside end of the pipe shall be firmly supported by block or natural stone. Both the inside and outside ends of the pipe shall be clear of any obstructions which would impair or restrict flow. Both ends of the pipe shall be covered with a protective screen mesh. Gravel shall be installed over the ends of the pipes to protect the pipe from roof falls and plugging. Gravel shall form a drain and cover the top of the pipe with a minimum of 8 inches of material. The gravel drain shall be no less than 18 inches wide and shall extend to and from the end of the pipes a minimum of two feet. Gravel used in the drain channels shall be selected material ranging from ¾ to 6 inch in size. CONTRACTOR shall extend a drainage channel away from the bulkhead if it is situated such that water could impound near the base.

## D. POLYURETHANE FOAM (PUF) APPLICATION

1. PUF shall be applied in lifts with a maximum rise of 1.5 feet. Installed PUF lifts shall pass through the tack-free stage before applying the next lift. At no time shall sprayed or poured PUF cut into rising foam. The PUF shall be applied in such a manner that the entire void is filled, and that shadow zones or voids are not created during PUF application, and does not raise the temperature to unsafe levels. At the discretion of the OWNER, thermocouples may be used to monitor exothermic generation. PUF application shall cease if heating or off-ratio foam is observed. The CONTRACTOR shall remedy off-ratio foam and demonstrate proper quality PUF to the OWNER before application resumes. See Part 5 below for characteristics of off-ratio foam.
2. The surface of the void to be filled shall be as free as possible of grease and standing water. PUF shall not be applied to surfaces with running water. Remedial action for such situations shall be specified by the OWNER. Polyurethane foam shall not be applied directly to a debris plug, but must be applied to a form of known physical and chemical properties. PUF shall not be applied during rain unless the foam is protected from interaction with water by a physical barrier.
3. If off-ratio PUF is observed, the applicator must stop, correct the imbalance, and continue application with the proper ratio PUF. Correction and determination of the foam ratio shall be done on a plastic sheet away from the work area. Any lift of off-ratio PUF comprising over two percent (2%) of the intended PUF column height shall be removed. An amount of

off-ratio PUF less than two percent (2%) of the specified volume may remain if allowed to cool, and if the outer perimeter of off-ratio foam is removed.

4. The CONTRACTOR shall be responsible for any lost or damaged equipment. In addition, damages or claims arising from PUF overspray shall be the responsibility of the CONTRACTOR. Under no circumstances shall foreign material be placed in the PUF unless specifically authorized by the OWNER. Non-PUF materials must be non-toxic, non-hazardous and not compromise the strength or water saturation characteristics of the PUF.
5. Upon reaching the specified grade as shown on the Standard Drawing, the CONTRACTOR shall clean up PUF operations and wait a minimum of one hour before initiating construction of the concrete plug.

E. RANDOM FILL MATERIAL

1. Random fill material shall consist of on-site, native materials as approved by the OWNER. Fill material shall be placed to a minimum thickness of three feet.
2. Materials for random fill material shall be placed by methods to produce a uniform mass. The material may be placed by hand or equipment. The final surface of the backfilled opening shall be graded to blend with the surrounding contour.

F. SITE CLEAN-UP

All construction-generated trash and debris, such as scrap materials and spilled PUF shall be cleaned up and removed. CONTRACTOR shall avoid spraying foam at undesignated targets. Improperly applied PUF and overspray shall be removed.

4.03 FIELD QUALITY CONTROL

- A. Periodic checks of the quality of PUF applied shall be made by the OWNER. The main check on quality will be visual. Acceptable PUF shall be tan-white to buff in color with no vesicles and a smooth to coarse orange peel surface. Any one of the following conditions shall cause PUF application to cease, and efforts to correct the off-ratio condition begin.

| CONDITION                                                                                                 | POSSIBLE CAUSE        |
|-----------------------------------------------------------------------------------------------------------|-----------------------|
| Dark PUF Color<br>Smooth and Glassy<br>Friable or Brittle PUF<br>Improper Density                         | Excess A<br>Component |
| Light to White in Color<br>Bad Cell Structure<br>Mottled Appearance<br>Blowholes or Pinholes              | Excess B<br>Component |
| Slow rise<br>Poor Cell Structure<br>Frequent Equipment Clogging<br>Slow Curing<br>Bad Physical Properties | Bad Material          |

- B. At any time during PUF application, the OWNER may call for a density test. The applicator shall fill a container provided by the OWNER for this purpose, and the sample will be tested for density. The density of the sample shall be within eight percent (8%) of the nominal 2 pounds per cubic foot density, with a minimum installed density of 1.85 pounds per cubic foot. Density tests indicating PUF installed is not within the minimum specified density shall cause corrective

action resulting in PUF within the acceptable nominal range, less deviation due to barometric pressure changes from STP (Standard Temperature and Pressure).

- C. Density tests of PUF shall be conducted at no cost to the OWNER. At the discretion of the OWNER, density tests showing PUF in the acceptable range may be taken in the center of the cavity to which PUF is being applied. A sampling box constructed of sheet aluminum and lined with polyethylene may be lowered into the cavity to take a representative sample of PUF just above the level of installed polyurethane.

## PART 5 - MEASUREMENT AND PAYMENT

### 5.01 SPECIAL CONSIDERATIONS

- A. The CONTRACTOR's attention is specifically directed to the following.
- B. The final quantities for the major categories of materials may vary from the quantities shown on the site-specific information in Section 0300 and/or the appendices. The quantities estimated are based on information gathered and interpreted from surface investigations.
- C. The boundaries of classified materials, along with the volumes are estimates and intended to serve as a guide in outlining the scope of work and evaluating the bids.

### 5.02 MEASUREMENT

Measurement for PUF mine closures will be on the BID PRICE per mine opening. The BID PRICE shall include all costs for labor, materials, equipment and all other items necessary for completion of the work as described in this section. Measurement will be based on and compared to the dimensions and quantities identified on the bid sheets, these Specifications and Drawings.

### 5.02 PAYMENT

- A. Polyurethane foam closures will be paid for per each PUF closure completed at the contract BID PRICE, as modified by any change orders. Payment at the BID PRICE shall be full compensation for furnishing, placing all materials, including all labor, equipment, tool, and incidentals necessary to complete closure installation in accordance with the Standard Drawings and Specifications. No partial payments will be made for individual mine openings.
- B. Installation of PUF, fabrication of the concrete plug, placement of filter cloth and ventilation/drain pipes, backfill, revegetation, and cleanup will not be measured for direct payment but will be considered subsidiary to PUF closures.
- C. No payment shall be made for off-ratio PUF.
- D. Payment at the UNIT PRICE for additional quantities will be made for PUF mine closures when final quantities are greater than 15 percent in excess of the estimated quantities shown on the bid sheet for a given mine site. Such unit price payment will require proof of additional quantities provided by the CONTRACTOR and approval of the OWNER, and shall be full compensation for the approved additional grate quantity. Reduction of payment for lesser quantities of installed grate will also be made by the OWNER for quantities greater than 15 percent below the estimated quantity shown on the bid sheet for a given mine. Such UNIT PRICE adjustment will require approval of the OWNER and will be full compensation for approved additional or reduced mine closure quantities.

END OF SECTION 0254

## 0255 Crown Pillar Excavation

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. The WORK included for this section of the Project area involves excavation of potential crown pillars by the CONTRACTOR's method, provided the CONTRACTOR has the capability of providing trackhoe excavation.
- B. The primary objective of this phase of WORK is to remove and, through backfilling, stabilize any unstable crown pillar sections that may exist in the Project area. This will require probing for and excavation of the crown pillar at the locations shown in the Drawings.
- C. Trackhoe excavation is envisioned by the OWNER to be the primary method for excavating unstable crown pillars.
- D. The crown pillar is the unmined portion of the vein that was left at the top of the mined-out stope to prevent the ground surface from caving into the underground mine workings which vary in width and may extend along the entire length of the project areas. Depending on the amount of caving that has occurred underground, the mine voids could extend several hundred feet below the surface, however, it is not envisioned that the depth of void will extend beyond the depths of the deepest openings measured. The depth at which the top of the void will be encountered is expected to vary depending on subsurface caving and on the thickness of colluvial material covering the crown pillar.
- E. Excavation of the crown pillar will be required where the depth to the bottom of the intact crown pillar rock is less than 15 feet.
- F. The material removed from the crown pillar(s) will either be placed directly into exposed mine voids or will be used to backfill previously excavated portions of the crown pillar excavation trench. Backfill borrow locations and modality is described in the respective 0300 sections of the bid document. The WORK includes the following elements:
  - 1. Cover soil salvage, stockpiling, and replacement;
  - 2. Material breaking, ripping, and loosening;
  - 3. Excavation, loading, hauling, and movement of material;
  - 4. Backfilling and placement of material in mine voids and in the crown pillar excavation trench; and,
  - 5. Construction surveying.
- G. Prior to the WORK, the CONTRACTOR shall become familiar with the hazardous site conditions and satisfactorily address the necessary safety constraints and issues associated with this WORK.
- H. This WORK shall begin and sequence as proposed by the CONTRACTOR.

#### **T09S, R21E Crown Pillar Work**

The crown pillar exploratory work in T09S, R21E consists of probing the gilsonite vein 650' along strike between sites 4092132VO005 and 4092132VO003. This probing is to be to a depth of 15 feet, using either long-hole drilling or an auger type drill. Approximately 61 holes spaced on 10-foot centers will be necessary. This probe work is covered in the Primary Bid section and is to be considered a mandatory part of the project.

If a crown pillar (less than 15 feet thick) is discovered, it is estimated that 45.8 cubic yards of PUF and 5.3 cubic yards of concrete could be required to cap the gilsonite vein. This estimate is based on the averaged widths and depths of sites VO005 and VO003. In between VO005 and VO003 are three open sites, VO001, VO002 and VO004, which will be encountered in the probing and excavating/filling process. Removal of the upper 2 feet of the potential crown pillar and capping of the exposed trench is included in the bid section as a Contingency Bid item.

#### **T10S, R21E Crown Pillar Work**

The crown pillar exploratory work in T10S, R21E consists of probing the gilsonite vein along strike between sites 4102129VO001-VO002, VO003-VO004, VO003-VO001, VO004-VO005 and finally a roughly 40-foot section immediately uphill and west of VO005. This probing is to be to a depth of 15 feet, using either long-hole drilling, auger type drill or backhoe. This probing work is to be done in a manner as described in Section 0300. If a backhoe is used for probe work, a minimum of 29 (15-foot deep) backhoe digs spaced equally between VO002 and VO005 will be necessary. The probing work is covered in the Primary Bid section and is a mandatory part of the project.

If a crown pillar (less than 15 feet thick) is discovered, the estimated total (maximum) amount of backfill envisioned for these five sites (if the voids underneath are to maximum measured depth) is 3,658 cubic yards. This estimate is based on the averaged widths and depths of the observable sites. Removal of potential crown pillars and backfilling of the exposed voids is included in the bid section as a Contingency Bid item.

The material removed from the crown pillar(s) will either be placed directly into exposed mine voids or will be used to backfill previously excavated portions of the crown pillar excavation trench. Backfill borrow locations and modality is described in the respective 0300 sections of the bid document. The WORK includes the following elements:

1. Cover soil salvage, stockpiling, and replacement;
2. Material breaking, ripping, and loosening;
3. Excavation, loading, hauling, and movement of material;
5. Backfilling and placement of material in mine voids and in the crown pillar excavation trench; and,
5. Construction surveying.

#### **1.02 SUBMITTALS**

- A. At the Pre-Construction Meeting, the CONTRACTOR shall submit his excavation design to the OWNER. The design shall illustrate the specific location, pattern, direction, type, size, depth, and angle of sidewalls required to safely excavate the crown pillar. At a minimum the design shall include:
  1. A sketch of the earthwork sequence and pattern; and,
  2. A list of the required equipment.
- B. Any excavation design modification made by the CONTRACTOR shall be submitted for approval to the OWNER 24 hours prior to field implementation.
- C. The CONTRACTOR shall submit with the Bid Proposal a list of equipment to be used for completion of this WORK.

### 1.03 RELATED WORK

- A. Section 0270: Site Grading/Earthwork
- B. Section 0300: Site Specific Requirements

### 1.04 EQUIPMENT

- A. The CONTRACTOR shall be aware of the unstable ground conditions present at the site. The CONTRACTOR will be solely responsible for the safety of his personnel and equipment. The CONTRACTOR shall have appropriate equipment, means, methods and/or devices to provide physical securement of personnel and equipment to the footwall side of the crown pillars. If the apparent dip of the vein at the project is near vertical, the footwall side of the vein may be difficult to determine. However, it will still be the CONTRACTOR'S responsibility to safely position all personnel and equipment at all times. Any loss of or damage to any equipment, tools or other appurtenances shall be at the CONTRACTOR's expense; the OWNER will not pay for any lost or damaged equipment.
- B. The hazards associated with the crown pillar excavation shall require the CONTRACTOR to devise an excavation operation from the safest (footwall) side of the vein.
- C. The CONTRACTOR shall be familiar with the access and terrain associated with the locations shown in the Drawings. Access to these locations shall be limited to the necessary personnel and equipment. The CONTRACTOR shall not be allowed to make additional access or disturbance without the OWNER's consent. Any additional disturbance made by the CONTRACTOR shall be constructed and reclaimed at the CONTRACTOR's expense.

### 1.05 DEFINITIONS

- A. Crown Pillar - The portion of ore zone (vein) rock left unmined and providing surface ground control above mined out stopes and rooms; does not include soil and unconsolidated material overlying rock beds.
- B. Unconsolidated - The surface soil and underlying lithology lying above the crown pillar ore zone (vein) rock in varying heights.
- C. Footwall and Hanging-Wall - When ore is removed from a dipping bed, the bottom of the bed is called the "footwall" and the top of the bed is termed the "hanging-wall". The "footwall" is supported by underlying rock. However, the "hanging-wall" is positioned above the mine void where it is supported only by its own strength and by whatever supports were used in the mine.

### 1.06 CONDITIONS AND RESTRICTIONS

- A. The CONTRACTOR's supervisors, personnel, and operations shall comply with the following laws and regulations:
  - General Safety Orders of Utah Coal Mines
  - Federal Regulation CFR 30 Part 56
  - Federal Regulation CFR 30 Part 75
  - Federal Regulation CFR 30 Part 700 to end
  - All applicable MSHA and OSHA rules and regulations
- B. Trapped gilsonite dust can be very explosive, in fact more so than coal dust. Many explosions and fatalities have occurred throughout the mining history of this region. For this reason, the

CONTRACTOR will NOT use explosives or explosive materials to probe for or remove any crown pillars that are encountered.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. All materials transportation, storage and handling procedures shall comply with the following regulations:
- General Safety Orders of Utah Coal Mines
  - Federal Regulation CFR 30 Part 56
  - Federal Regulation CFR 30 Part 75
  - Federal Regulation CFR 30 Part 700 to end
  - All applicable MSHA and OSHA rules and regulations

## PART 3 - EXECUTION

### 3.01 APPROACH

- A. Under no circumstance shall the CONTRACTOR's personnel operate, repair or perform any operation associated with these specifications from an unsecured position directly above the crown pillar or on the hanging wall. The operation of equipment shall be performed only by personnel secured on the footwall or other approved secured position. Equipment shall only be allowed to operate directly above the mined stopes following backfilling.
- B. The OWNER will review the CONTRACTOR's method of equipment and personnel securement. The OWNER'S approval for the excavation method will not relieve the CONTRACTOR of any responsibilities associated with these specifications, with personnel safety or with lost or damaged equipment.
- C. The CONTRACTOR shall excavate the crown pillar at the locations shown on the Maps and at other locations that the OWNER may select during construction. The full extent of the unstable crown pillar length and depth will be determined during construction. The length of crown pillar shall be measured along the strike of the ore zone (vein).
- D. The excavation will be advanced through the unconsolidated surface material and through the ore zone (vein) crown pillar to an average depth of 15 feet below the existing surface along the profile outlined on the Maps.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. Measurements of the actual voids that are encountered underneath the Crown Pillar Excavations will be required for payment of this Work. These items are listed in the Bid Section as Contingency Items because it is unknown whether and to what extent this work will be needed. The volumes included as contingency bid items for this project are based upon an estimated theoretical maximum void (in bank cubic yards) that would be indicated by the measurable depths, widths and lengths of observed openings.
- B. The CONTRACTOR shall recognize that unknown conditions inside the mine could affect the depth of the excavation causing an overrun or an underrun in the estimated quantity. By

bidding the Sand Trap Bonanza Project, the CONTRACTOR recognizes variances in the estimated quantities may occur.

- A. Measurement for the Crown Pillar Excavation WORK will be based upon the volume (LxWxD) of the entire void encountered, including the space the crown pillar once occupied, in bank cubic yards. The depth measurements will be based from the existing surface to the bottom of the measurable void(s) and will include the soil and unconsolidated portion above the crown pillar to the existing ground surface. The width measurements are based upon ore zone vein width, therefore, width measurements only apply to the actual vein width, which is easily distinguished in the field. Length measurements will only apply to the specific work area described in the 0300 section under The Work. Unclassified footwall or hanging wall excavation or excavation along vein strike (that falls outside the specified dimensions in the 0300 section "The Work") that may be necessary for crown pillar removal or backfill will not be considered a separate part of this measurement or bid.
- B. Backfilling is considered part of the operation and will not be measured separately for payment either as Crown Pillar Excavation or as Earthwork. Moreover, the operation will not be considered completed and the excavation quantities will not be approved for payment until the excavated materials have been placed into the mined out stopes, into subsidence areas, or into abandoned sections of the crown pillar excavation trench.
- E. It shall be the CONTRACTOR's responsibility to provide excavation means and methods to the dimensions required by these Specifications.
- F. The OWNER will maintain a record of Crown Pillar Excavation activities on at least a daily basis. The OWNER may request that the CONTRACTOR conduct other surveys or measurements to determine progress of the WORK.
- G. Should the CONTRACTOR estimate the cubic yards of materials to be greater than 15% more than the quantities shown in the Bid Sheet, a CHANGE ORDER using the CONTRACTOR'S guaranteed Variable Quantity Unit Price must be approved by the OWNER for ADDITIONAL WORK over the 15% quantity prior to the CONTRACTOR undertaking ADDITIONAL WORK.

When the actual quantity of Crown Pillar Excavation work performed as determined by measurement is less than the 15% estimated quantity on the Bid Sheet, the OWNER will execute a reduction in the Bid Price by the amount of variance using the CONTRACTOR'S guaranteed Variable Quantity Unit Price for the quantity greater than the 15% reduction. This adjustment shall be executed by a CHANGE ORDER.

#### 4.02 PAYMENT

- A. Payment will be based on and compared to the quantities identified in the Bid Sheet of these Contract Documents. Payment for Crown Pillar Excavation will be at the Bid Price for the estimated quantity with a fixed Variable Quantity Unit Price used to adjust the payment for measured quantities that are in excess of 15% higher or lower than the estimated quantity. This payment will be total compensation for all Crown Pillar Excavation related work and will be total compensation for all labor, equipment, tools and incidentals necessary to complete the work. All payments shall be authorized by the OWNER only for completed Crown Pillar Excavation. Payment of the Bid Price will be based on bank cubic yards.
  - 1. Payment at the Bid Price will be for the estimated quantity with a tolerance in the estimated quantity of 15%. The Bid Price will be paid for measured quantities falling within a 15% tolerance of the estimate quantity without respect to the actual quantity.

2. Payment at the Variable Quantity Unit Price for additional quantities of Crown Pillar Excavation will be made for that portion of the measured quantity that is greater than 15 percent in excess of the estimated quantity shown on the Bid Sheet. Reduction of payment for lesser quantities of Crown Pillar Excavation will also be made by the OWNER should the measured quantity fall at least than 15% below the estimated quantity shown on the Bid Sheet. A reduction in payment will be computed by multiplying the Variable Quantity Unit Price by the quantity difference between the lower tolerance level of the estimated quantity and the measured quantity. Such Unit Price payment will require approval of the OWNER, and will be full compensation for approved additional or reduced Crown Pillar Excavation.
  3. The Variable Quantity Unit Price is fixed without regard to any variance in the estimated quantity and will not be subject to renegotiation.
- B. As work progresses, partial payments based on measured quantities may be requested on monthly applications for payment. Accumulated quantities for partial payment may not exceed the upper tolerance limit of the estimated quantity on the Bid Sheet until a Change Order increasing such quantities and their payment has been approved.
1. Partial payment of the Bid Price for accumulated quantities below the estimate quantity on the bid sheet will be computed by first dividing the measured quantity in bank cubic yard by the total estimated quantity in bank cubic yards; then multiplying this factor by the Bid Price to determine the payment earned.
  2. Partial payment for quantities falling within the upper and lower tolerance range of the estimated quantity will not be made.
  3. Partial payment for quantities in excess of the upper 15% tolerance range of the estimated quantity will be paid at the Variable Quantity Unit Price.

#### 4.03 CONTINGENCY BID ITEMS

- A. T09S, R21E; Crown Pillar Removal and Backfill: 133.8 cubic yards at the Bid Price.
- B. T10S, R21E; Crown Pillar Removal and Backfill: 3,658 cubic yards at the Bid Price.

END OF SECTION 0255

## 0270 Site Grading/Earthwork

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

This section covers the WORK necessary for general earthwork and site grading. The principal items of WORK include, but are not limited to, grading and/or burial of mine dumps, placement of soil material over mine dumps, transportation and placement of mine dump material, installation of riprap ditches and placement of soil materials.

#### 1.02 SUBMITTALS

- A. CONTRACTOR shall submit *with the Bid Proposal* a list of equipment to be used to complete this section of the WORK.
- B. CONTRACTOR shall submit *with the Bid Proposal* locations of borrow areas for fill and topsoil for the approval of the OWNER when such areas are not shown on the Drawings.

#### 1.03 RELATED WORK

- A. Section 0250: Mine Closures
- B. Section 0255: Crown Pillar Excavation
- C. Section 0280: Drainage Control & Stream Protection
- D. Section 0290: Revegetation
- E. Section 0300: Specific Site Requirements

#### 1.04 PROTECTION

CONTRACTOR shall conduct grading and earthwork operations in a fashion to minimize erosion during and after construction. This shall include limiting disturbance of existing vegetation, working equipment parallel to contours, use of temporary drainage control where appropriate, and other practices as directed by the OWNER. Drainage and irrigation ditches shall be kept clear.

### PART 2 – PRODUCTS/MATERIALS

#### 2.01 VEGETATION

Naturally occurring plant growth including: trees, shrubs, grasses, weeds, sagebrush, etc.

#### 2.02 TOPSOIL

Mineral soils, with organic matter, free of large roots, rocks, debris, and large weeds, obtained from the areas and to the maximum depths specified on the Drawings.

#### 2.03 SUBSOIL

Mineral soils, free of organic matter and excessive amounts of construction debris and rubble, naturally or artificially (fill) occurring between topsoil and bedrock, including rocks and boulders.

#### 2.04 MINE DUMP MATERIAL

Material produced in the process of mining, generally found on the site in waste piles and spread over subsoils and fill in thin veneers. The dump material typically consists of overburden materials, ore and fines, and intermixed subsoils. Material size ranges from silts and sands to rock greater than 18 inches in diameter.

## 2.05 RANDOM FILL

Artificially placed material consisting of mine dump material, excavated subsoils and unclassified materials. Material for use as random fill shall be free of wood, roots, weeds, construction debris, and other combustible materials. Random fill shall not contain material sizes or gradations which preclude compaction.

## 2.06 UNCLASSIFIED EXCAVATION

As described by these Specifications, excavation is unclassified and includes in-situ soils as well as buried rubble and construction debris. It is not the intent of these Specifications to require the excavation of bedrock. Should bedrock be encountered, the OWNER shall be immediately notified so that field adjustments to the reclamation contours as shown in the Drawings can be made.

## 2.07 SOIL/ROCK FILL

Locally available material consisting of organic-free rock and coarse soils. Materials for use as soil/rock fill shall be designated on site by the OWNER.

# PART 3 - EXECUTION

## 3.01 STRIP VEGETATION

WORK shall consist of removing vegetation, roots, and surficial debris from areas of reclamation as directed by the OWNER. The resulting debris shall be disposed of offsite, or may be buried onsite in an area approved by the OWNER. However, in no case may combustible materials be buried or otherwise placed in coal refuse.

## 3.02 SITE GRADING

### A. GENERAL

The intent of this WORK is to develop the reclaimed contours shown in the Drawings and to establish favorable drainage conditions and erosion protection at all sites. Random fill shall be placed directly to meet the specified reclamation surface contours. Lines and grades as defined on the Drawings are subject to modification, dependent on the field conditions encountered. Unless identified on the Drawings or Specifications, the lower limit of excavation shall be the top of competent bedrock. The steepest allowable slope of reclaimed areas shall be 3:1, unless otherwise stated in these Specifications or shown on the Drawings. Site grading shall be performed to provide a reclamation area that blends well with natural conditions in adjacent areas.

### B. DRAINAGE GRADING

1. At the location of each mine opening, CONTRACTOR shall grade the existing topography to allow surface water to drain freely away from the mine closure. Efforts shall be made to minimize the extent of this grading and limit the disturbance of existing vegetation.
2. Regraded surfaces for waste dump reclamation, burial of mine dump material, and reshaping of drainage channels shall be sloped to drain freely and shall include water bars, intermediate benches, and other such devices as shown on the Drawings to control precipitation runoff and prevent erosion.

### C. STRIP MINE DUMP MATERIAL TO MINERAL SOILS

In the areas designated on the Drawings, CONTRACTOR shall strip existing mine dump material to sufficient depth to expose natural soils. Refuse from these areas shall be utilized as fill for site grading. Stripping depths shown are approximate only, and all mine dump material present shall be removed from the area. After mine dump material removal, soils within the stripped area shall be regraded to approximate the reclamation contours shown on the Drawings. CONTRACTOR shall not be required to import fill to the stripped area to create the contours shown.

#### D. EXCAVATION

CONTRACTOR shall excavate to the lines and grades shown on the Drawings or as directed by the OWNER. Excavated materials conforming to the definition of random fill, including subsoils, mine dump material, and unclassified materials, shall be placed directly as fill in designated fill areas. Concrete and other inert materials may be buried at depth greater than 36 inches with the approval of the OWNER. CONTRACTOR shall be responsible for all surveying necessary to perform the WORK and determine pay quantities. CONTRACTOR shall confirm that the survey base used is consistent with the plans provided by the OWNER. The OWNER shall have surveys performed at its discretion for confirmation purposes.

#### E. FILL

Where fill is required, CONTRACTOR shall use excavated material acceptable as either random fill or soil/rock fill. Rocks and boulders greater than 12 inches in diameter shall be removed for use as riprap, buried in fill in accordance with grading tolerances below, or left on finished grade either singly or in groupings to blend with the natural surroundings. Construction debris may be incorporated in the fill providing such materials are properly broken down and placed in such a manner that no open voids exist. The placement of debris in the fill shall be subject to the approval of the OWNER. The distribution of materials throughout a fill shall be such that there shall be no lenses, pockets, streaks or layers of material differing substantially in texture and gradation from the surrounding material in the fill. Fill materials to be compacted with hauled or self-propelled compactors shall be placed and spread in horizontal lifts not exceeding 24 inches loose measure. Fill materials to be compacted by hand-guided or hand-operated equipment shall be placed and spread in horizontal lifts not exceeding 12 inches loose measure.

#### F. FILL COMPACTION

Each lift of material placed as fill shall be compacted by a minimum three (3) passes of a compactor exerting a minimum pressure of one hundred (100) pounds per square inch or as specified in Section 0300: Specific Site Requirements. Water shall be used as necessary in the compaction operation for dust control and to achieve the required compaction.

#### G. GRADING TOLERANCES

1. The reclaimed surface shall be constructed to produce the contours shown on the Drawings within a tolerance of plus or minus one foot. Where field conditions warrant a modification in the grading plan, top of subgrade shall be as directed by the OWNER. The top two feet of the subgrade shall consist only of clean subsoils or coal refuse which have been cleaned of cobbles and boulders exceeding twelve (12) inches in diameter.
2. Abrupt changes in grade shall be rounded to provide a pleasant visual effect.
3. Depressed areas shall be graded to prevent ponding or standing water.

#### H. SCARIFICATION

Scarification or discing shall be completed when the veneer of coal refuse or waste rock is generally less than 6 inches thick. Scarification shall be accomplished with a tractor or bulldozer-hauled scarifier or disc-harrow. Where inaccessibility precludes the use of hauled equipment, scarification shall be completed manually with hoes and mattocks.

#### I. TOPSOIL PLACEMENT

1. Areas to be covered with topsoil shall be scarified to a minimum depth of 4 inches.
2. Following completion of regrading and earthwork to the contours required by these specifications, designated disturbed areas shall be covered with topsoil placed to a minimum thickness of 12 inches unless otherwise directed by the OWNER. On slopes of 3h:1v or flatter,

topsoil materials shall be compacted in the same manner as fill material. On slopes steeper than 3h:1v, the topsoil surface shall be stabilized by means of erosion control blanket, vegetation, riprap, or as otherwise directed by the OWNER. The topsoil shall be obtained only from the borrow areas shown and to the maximum depths specified on the Drawings.

J. DEBRIS BURIAL

Construction debris may be incorporated in fill providing such materials are properly broken down and placed in such a manner that no open voids exist. The placement of debris in fill shall at all times be subject to the approval of the OWNER.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

- A. Measurement will be based on and compared to the dimensions and quantities identified in the bid sheets, these Specifications and Drawings. The OWNER may request intermediate measurements to determine progress of the WORK.
- B. Measurements of cubic yards of Earthwork will be required for each mine site. Such measurement shall be used by the OWNER for comparison with the estimated quantity shown on the bid sheets.
- C. CONTRACTOR shall complete surveys before and after any site grading or earthwork as directed by OWNER. Volume of material removed or placed shall be calculated by the average-end-area method based on cross-sections developed from CONTRACTOR'S surveys. The OWNER will have surveys performed at OWNER's discretion for confirmation purposes.
- D. Should the CONTRACTOR estimate the cubic yards of materials to be greater than 15% more than the quantities shown in the Bid Schedule, a CHANGE ORDER must be negotiated with the OWNER for ADDITIONAL WORK prior to the CONTRACTOR undertaking ADDITIONAL WORK. Measurement for quantities shall be determined prior to the WORK.
- E. When the actual quantity of Site Grading/Earthwork performed as determined by measurement is greater than 15% less than the estimated quantity on the bid sheet, the OWNER will negotiate a reduction in the BID PRICE by the amount of variance using the UNIT PRICE. This adjustment shall be executed by a CHANGE ORDER.

4.02 PAYMENTS

- A. Payment for Site Grading/Earthwork will be for each mine site at the BID PRICE, as modified by any CHANGE ORDERS. Payment shall be authorized by the OWNER only for completed Site Grading/Earthwork. No partial payments shall be made.
- B. Payment at the UNIT PRICE for additional quantities of Site Grading/Earthwork will be made for quantities greater than 15 percent in excess of the estimated quantity shown on the bid sheet for a given mine site. Reduction of payment for lesser quantities of Site Grading/Earthwork will also be made by the OWNER for quantities greater than 15% below the estimated quantity shown on the bid sheet for a given mine. Such UNIT PRICE payment will require approval of the OWNER, and will be full compensation for approved additional or reduced Site Grading/Earthwork.
- C. Payment for additional topsoil placement at individual sites designated by the OWNER will be at the UNIT PRICE bid. For bidding it will be assumed that additional topsoil can be readily excavated from the designated borrow area with standard earthwork equipment, no access improvement to the area will be required, and the haul distance will not exceed two miles.

END OF SECTION 0270

## 0280 Drainage Control & Stream Protection

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. Drainage control shall be required for a number of applications in the WORK, backfilling subsidence openings, and site grading/earthwork. This section covers the WORK necessary for construction of permanent and temporary drainage control including ditches, water bars, road crossings, stream crossings and energy dissipators.
- B. This item also consists of WORK to be performed for protection of the aquatic environment while performing any WORK on site. The specific goal of the item is to limit additional sedimentation of the aquatic environment during construction activities and while vegetation is reestablishing. Streams of primary concern are those listed in the Utah State Health Department's Wastewater Disposal Regulations Part II and those identified by OWNER. Streams of concern in the project area are specified in Section 0300: Specific Site Requirements. For streams of primary concern, any increase in turbidity must be limited to no more than 10 Nephelometric Turbidity Units (NTU) above background conditions when they range from 0 to 100. If background NTU is greater than 100, then maximum allowable increase in turbidity cannot exceed 10 percent.

#### 1.02 SUBMITTALS

- A. CONTRACTOR shall submit *with the Bid Proposal* the schedule and plan for implementing drainage control measures and for utilizing riprap, gabion mattress, or a combination of systems in accordance with these Specifications and Drawings. If a combination of systems is planned, specific locations for each item shall be identified. Also included shall be specifications of riprap or gabion mattress fill material if supplied as import, and specifications for gabion mattress to be used.
- B. The CONTRACTOR shall submit *with the Bid Proposal* a description of and location of stream protection measures to be used at each site.
- C. CONTRACTOR shall submit *with the Bid Proposal* the location of borrow areas intended for riprap unless otherwise specified in Section 0300: Specific Site Requirements, or the Drawings.
- D. CONTRACTOR shall submit *with the Bid Proposal* the specifications for materials and installation if either culverts or bridges are proposed for use.

#### 1.03 RELATED WORK

- A. Section 0230: Access Improvement
- B. Section 0240: Demolition and Clean-up
- C. Section 0270: Site Grading/Earthwork
- D. Section 0290: Revegetation
- E. Section 0300: Specific Site Requirements

#### 1.04 PROTECTION

- A. CONTRACTOR shall conduct the WORK in a manner to minimize disturbance of existing trees and vegetation.
- B. CONTRACTOR shall conduct the WORK in a manner not to increase surface erosion due to alteration of natural drainage patterns.

### PART 2 – PRODUCTS/MATERIALS

#### 2.01 DEFINITIONS

The terms Random Fill, Topsoil, and Coal Refuse shall be as defined in Section 0270: Site Grading/Earthwork.

## 2.02 RIPRAP

- A. Riprap shall be rock that is dense, sound, and resistant to abrasion and shall be free from cracks, seams, and other defects that would tend to unduly increase its destruction by water and frost actions. The rock shall be solid, angular or sub-angular fragments of quarry stone. Round, riverbed-type rock is not acceptable. Neither breadth nor thickness of a single stone shall be less than one-third its length. The unit weight of stone shall be no less than 155 pounds per cubic foot. Rocks susceptible to solution and disintegration upon contact with standing or flowing water shall not be used as riprap.
- B. Riprap shall be reasonably well-graded with rock diameters specified below, or as specified in Section 0300 or on the Drawings:

| <u>Rock Size</u> | <u>Percent Finer by Weight</u> |
|------------------|--------------------------------|
| 2 inch           | 15 percent ( $D_{15}$ )        |
| 12 inch          | 50 percent ( $D_{50}$ )        |
| 15 inch          | 100 percent ( $D_{100}$ )      |

- C. The thickness of the riprap should be at least as large as the largest diameter stone in the riprap.

## 2.03 GRAVEL FILTER BLANKET

- A. Materials used for the underlining gravel filter for riprap and culverts shall be clean gravel composed of hard, durable stone and shall be free of fine sand, silt, or clay.
- B. The allowable particle size shall be between 0.8 and 2.0 inches. Alternative gradations shall be only at the OWNER'S approval.

## 2.04 GEOTEXTILE FILTER BLANKET

Geotextile fabric used in the lining of drainage channels as a filter blanket beneath riprap shall consist of Mirafi 500X or equivalent (such as DuPont Typar 3401, Polyfelt TS800, or Trevira 1135).

## 2.05 IN-STREAM FABRIC CHECK DAM

Fabric check dams shall consist of Mirafi 140N, UV resistant fabric or equivalent supported with 6 inch x 6 inch mesh (or smaller) fence anchored into the stream bottom with steel posts.

## 2.06 SILT FENCE

Silt fences shall consist of Mirafi 500X, UV resistant fabric or equivalent supported with steel fence posts and/or 6 inch mesh fence.

## 2.07 WATER BARS

Water bars shall be elongated mounds of compacted soil constructed at an angle with respect to the slope of the terrain so that runoff is conveyed away from disturbed areas thereby alleviating rill and gully erosion.

## 2.08 STRAW BALE CHECK DAMS

Straw bale check dams shall consist of straw bales supported with steel stakes (T-posts, rebar, mine roof bolts). Wooden stakes are not acceptable as they tend to rot and do not penetrate stony ground well.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. All earthwork associated with construction of drainage control shall be in accordance with Section 0270: Site Grading/Earthwork.
- B. Wherever possible the CONTRACTOR shall install permanent drainage prior to the initiation of earthwork to minimize the need for temporary drainages.
- C. Two types of stream protection structures shall be used: in-stream check dams and silt fences between construction areas and streams.

### 3.02 TEMPORARY DRAINAGE DITCHES

- A. Prior to the initiation of earthwork, the CONTRACTOR shall effect temporary drainage control in the form of swales or ditches upgradient of WORK areas to minimize erosion during construction. Such drainage will be constructed with minimum disturbance to existing vegetation, and upon completion of work shall be graded to blend with surrounding contours and revegetated per Section 0290: Revegetation.
- B. On inclined surfaces, temporary access roads shall be cut or crowned to slope in toward the hillside at a grade of not less than 2 percent. At the intersection of the inside edge of the access road with the slope, a shallow ditch shall be formed. Water bars shall be installed across the access road and roadside ditch. If the WORK is scheduled during wet weather, a catch basin and culvert shall be constructed at the base of the access road as directed by OWNER.

### 3.03 FABRIC CHECK DAMS

- A. In-stream fabric check dams, when approved by OWNER, shall consist of at least three sets of dams constructed immediately downstream from temporary stream crossings and major construction activities adjacent to streams. Spacing of the fabric dams shall be designated by OWNER. The bottom of the fabric of the dam shall be anchored with rock. For added stability, the top of the dam can be anchored onto a pole laid horizontally across the stream. Holes should be cut approximately 6 inches long with a knife at the approximate normal water level to allow flow of water through the dam. Fabric check dams shall be placed with the approval of the OWNER at locations on the watercourse that maximize sediment settling between dams.
- B. CONTRACTOR shall install dams before any other WORK begins on site including access improvement. CONTRACTOR shall inspect dams at least every other day and after every storm and clean them when necessary to the approval of the OWNER. Sediments pulled from behind the dams shall be disposed of in a designated fill area and not on the streambank. Fabric shall be replaced when necessary to maintain the integrity of the dam.

### 3.04 SILT FENCES

- A. Silt fence fabric shall be supported either on minimum 6 inch mesh hog wire fence anchored with steel posts spaced no more than six feet apart or with steel fence posts alone spaced no more than three feet apart. At least 12 inches of the lower edge of the fabric shall be securely anchored with rocks or buried with soil material. The fabric shall be attached with at least four wire ties to the posts. In situations where the silt fence will be in use past the construction season, the wire fence backing shall be used. In all cases, guy wire shall be used to support the fabric top. The height of the silt fence shall be no more than three feet high. About 9 to 12 inches of the fabric shall be draped over the top of the wire fence and fastened to fence posts with wire. On slopes of disturbed areas, distances between lengths of silt fences shall not exceed 100 feet. With the approval of the OWNER, silt fences may be positioned to take advantage of natural drainage at sites in order to minimize the length of the fence.
- B. At the discretion of the OWNER, the fences shall be maintained for one year after all construction activity has been completed at each site. The CONTRACTOR shall maintain fences until final demobilization from the project area. After demobilization, the OWNER will be responsible for maintenance and removal.

### 3.05 STRAW BALE CHECK DAMS

- A. Straw bale check dams shall be installed as required in ditches and swales to provide temporary erosion control.
- B. Straw bale check dams consist of a series of straw bales placed end to end and anchored with stakes. The bales should be placed on their sides so that the straw fibers are vertical and the binder twine is not in contact with the ground. The bales should be keyed into a shallow (4-6 inches deep) trench so that there is no gap between the bales and the ground surface. The excavated soil from the trench should be banked against the upslope side of the bales for an additional seal. Adjacent bales should be placed tightly together and anchored with at least two stakes per bale to prevent the bales from turning. Loose straw shall be stuffed between bales to fill any gaps.
- C. Straw bale check dams should extend far enough to each side from the center of the ditch so that the elevations of the bases of the end bales are higher than the top of the center bale (that is, so impounded water overflows at the center of the dam instead of at the ends).
- D. Rotted, silt-clogged, or broken bales should be replaced as necessary. The CONTRACTOR shall maintain straw bale check dams until final demobilization from the project area. After demobilization, the OWNER will be responsible for maintenance and removal.

### 3.06 TEMPORARY DRAINAGE CROSSINGS (LOW WATER CROSSINGS)

- A. Temporary crossings shall be designated on a site-specific basis depending on stream classification, time of year intended for use, the frequency and duration of use, discharge of stream and number of vehicles to cross. The design of such crossings shall at all times be subject to the approval of the OWNER.
- B. In the drainages, the preferred crossing shall consist of the placement of 6 to 9 inch nominal size clean rock in the channel to facilitate equipment access. The clean gravel shall be placed only to the extent necessary to provide a stable base for equipment crossing. Alternative temporary crossings shall be made only with the approval of the OWNER. These may include the construction of temporary bridges and culverts. In areas where access improvement is not required, stream crossings shall be made only with the approval of the OWNER.
- C. All crossings will be installed after required dams and fences are in place and in accordance with Section 0280, Part 3.03 and 3.04. Temporary bridge and culvert crossings must be removed as soon as possible after the construction activity is complete. Gravel crossings shall be left in place.

### 3.07 PERMANENT DRAINAGE CONTROL

- A. Ditches shall be constructed at the locations and to the dimensions shown on the Drawings.
- B. Where ditches cross areas of coal refuse, the bottom and sides shall be covered with a minimum of 24 inches of compacted soil.
- C. Place riprap or gabion mattresses in the locations and to the dimensions shown on the Drawings.

### 3.08 GEOTEXTILE FILTER BLANKET PLACEMENT

The geotextile fabric filter blanket shall be placed in the incised channel commencing at the downstream end and working upstream using care not to stretch or tear the material. At least a foot of the fabric shall be keyed into the sideslopes near the top of the channel and covered with soil. In channels where the width of the fabric material is less than the channel itself, the fabric must be overlapped in the channel bottom at least two feet. In addition, end lengths of the fabric shall be also overlapped at least two feet. Care shall be exercised in the placement of gravel or riprap on the surface of the fabric to prevent tearing.

### 3.09 GRAVEL FILTER BLANKET PLACEMENT

The gravel filter blanket shall be placed in the incised channel beneath all riprap and gabion materials as directed by the OWNER. The gravel shall be placed in one operation using methods that will not cause segregation of particle sizes. The surface of the finished layer should be reasonably even and free from mounds and windrows. The gravel need not be compacted in place, but shall be placed in such a manner as will result in uniform layers of material for riprap of the specified thickness.

### 3.10 RIPRAP PLACEMENT

- A. Before riprap is placed, the surface to be covered shall be fully compacted and graded to the required slope as shown on the Drawings. Cut-off trenches shall be excavated to the dimensions shown on the Drawings.
- B. Geotextile fabric filter and/or gravel filter blanket shall be placed to the dimensions shown on the Drawings.
- C. Riprap shall be placed directly on the filter blanket in the locations and to the contours shown on the Drawings. Riprap placement shall be done in a manner which will produce a reasonably well-graded mass of stone with the minimum practicable percentage of voids. The entire mass of stone should be placed in conformance with the lines, grades, and thickness shown on the Drawings. The riprap should be placed to its full course thickness at one operation and in such a way a manner as to avoid displacing the underlying material. Care should be exercised to prevent mixture of embankment and riprap materials.
- D. Riprap should typically be placed by end dumping to prevent segregation by sizes. It should be dumped from a vertical height of no more than 5 feet and should never be pushed downhill with a dozer, placed in layers, or conveyed down a chute as these operations cause segregation of particles. Where riprap is placed directly on filter fabric, the dump height should be no more than 3 feet to prevent tearing of fabric. Torn fabric shall be replaced with proper overlap as required.
- E. The large stones should be well distributed and the entire mass of stone should conform to the gradation specified. The riprap should be placed and distributed so that there will be no large accumulations of either the larger or smaller sizes of stone.
- F. Some roughness of the surface is acceptable and desirable, but the mass should be fairly compact with all sizes of material placed in their proper proportions. Hand placing or rearranging of individual stones by equipment may be required to achieve the results specified.

### 3.11 WATER BARS

- A. CONTRACTOR shall construct water bars on temporary access roads, in water courses, and at such other locations as shown on the Drawings or as directed by the OWNER.
- B. Water bars shall be constructed perpendicular to the gradient in order to deflect surface runoff toward catchments and drainage ditches or to otherwise reduce the velocity of runoff below the erosion threshold.
- C. Water bars shall consist of gravel-filled trenches excavated to a depth of 12 inches and a minimum width of 18 inches. The trenches shall be backfilled 4 to 6 inches above adjacent site grade. The surface of water bars on access roads shall be as directed by the OWNER.
- D. Unless otherwise specified, water bars shall be spaced at intervals of not more than 500 feet on slopes that are flatter than 15:1 (horizontal:vertical) and 300 feet on slopes between 15h:1v and 10h:1v. On steeper slopes, the spacing of water bars shall be as directed by the OWNER.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. Measurement will be based on and compared to the dimensions and quantities identified in the Bid Schedule, these Specifications and Drawings for each mine site. The OWNER may require the CONTRACTOR to provide measurements to determine progress and completion of the WORK.
- B. Measurements shall be required for a given mine site for cubic yards of riprap or bedding, square yards of geotextile fabric filter blanket, or lineal feet of ditch, streambank riprap, or fencing. Such measurement will be used by the OWNER for comparison with the estimated quantities shown on the Bid Schedule.
- C. Should the CONTRACTOR estimate the quantity of materials to be greater than 15% more than the quantities shown in the Bid Schedule, a CHANGE ORDER must be negotiated with the OWNER for ADDITIONAL WORK prior to the CONTRACTOR undertaking ADDITIONAL WORK. Measurement for quantities shall be determined prior to the WORK.
- D. When the actual quantity of Drainage Control performed as determined by measurement is greater than 15% less than the estimated quantity on the bid sheet, the OWNER will negotiate a reduction in the BID PRICE by the amount of variance using the UNIT PRICE. This adjustment shall be executed by a CHANGE ORDER.

#### 4.02 PAYMENT

- A. Payment for Drainage Control will be for each mine site at the BID PRICE, as modified by any CHANGE ORDERS. Payment shall be authorized by the OWNER only for completed Drainage Control. No partial payments will be made.
- B. Payment at the UNIT PRICE for additional quantities of Drainage Control will be made at the approval of the OWNER for quantities greater than 15 percent in excess of the estimated quantity shown on the bid sheet for a given mine site. Reduction of payment for lesser quantities of Drainage Control will also be made by the OWNER for quantities greater than 15% below the estimated quantity shown on the bid sheet for a given mine. Such UNIT PRICE payment shall be full compensation for approved additional Drainage Control.

END OF SECTION 0280

## 0290 Revegetation

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

The WORK consists of revegetation of the disturbed areas, including areas disturbed by the WORK. Revegetation shall include:

- A. Site preparation
- B. Seedbed preparation
- C. Topsoil placement as required
- D. Seeding
- E. Mulching
- F. Erosion control netting
- G. Seedling and cutting planting

#### 1.02 SUBMITTALS

- A. CONTRACTOR shall submit *with the Bid Proposal* the names of one seed supplier, and alternate, to be used for the seed mixtures required by these specifications.
- B. CONTRACTOR shall submit *with the Bid Proposal* a written description indicating equipment to be used to perform the work required in this section.
- C. CONTRACTOR shall submit *during construction* empty container labels, tags, and receipts for mulch material and seed for verification of materials being used.
- D. CONTRACTOR shall submit, if mulch is specified, *during construction and prior to applying mulch* the Phytosanitary Certificate required by the Utah Department of Agriculture.

#### 1.03 RELATED WORK

- A. Section 0230: Access Improvement
- B. Section 0250: Mine Closures
- C. Section 0270: Site Grading/Earthwork
- D. Section 0300: Specific Site Requirements

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. CONTRACTOR shall deliver seed in original containers showing analysis of seed mixture, percentage of pure live seed (PLS), year of production, net weight, date of packaging and location of packaging. Seed must be stored under dark, cool, and dry conditions. Damaged packages are not acceptable.
- B. Erosion control netting shall be stored out of direct sunlight.

### PART 2 – PRODUCTS/MATERIALS

#### 2.01 PLANT MATERIALS

- A. A combination of plant materials that may include seed, seedlings, containerized stock, and cuttings shall be used in revegetation. The use of the plant materials shall be in accordance with Section 0300: Specific Site Requirements and as shown on the Drawings.
- B. CONTRACTOR shall make a concerted effort to obtain all components of the plant materials mixture. Seed and nursery sources may require greater than six weeks notice to obtain specific species. More than one source may be required to furnish all seed or plant varieties. If all sources

have been exhausted, or if available seed or stock of a given species is of unacceptable quality, that species may be deleted or another species substituted. Any changes in the seed mixture shall require the written approval of the OWNER prior to execution of the contract.

- C. CONTRACTOR must submit name of company and alternate that will supply seed, see Section 1.02. A.

## 2.02 SEED

- A. The species composition and planting rates of the seed mixtures to be used are specified in Appendix A\*\*\*. Unless specified otherwise, seeding rates given are for broadcast seeding.
- B. All seed mixes shall be fresh, clean, new crop seed.

## 2.03 SEEDLINGS

- A. Seedlings include containerized stock, tubelings, and bare root stock obtained from nurseries. The species composition and planting rates of the seedlings to be used are specified in Appendix A\*\*\*
- B. Seedlings must be healthy and vigorous and not desiccated at time of planting. OWNER reserves the right to refuse payment for decadent plants.
- C. Bare root stock shall have roots that are not withered, dry, or partially dead due to improper transport and/or storage by the CONTRACTOR. All bare root stock shall be stored and delivered with roots in a damp medium.

## 2.04 DORMANT PLANT MATERIALS

- A. Dormant plant materials will be used for riparian area revegetation. Dormant plant materials include cuttings of live logs, twigs, or whips from wild tree stock.
- B. CONTRACTOR shall obtain dormant materials only from areas identified by the OWNER, and the OWNER shall approve and accept or reject the individual material cut. CONTRACTOR shall cut plant materials just prior to the breaking of dormancy, usually late March to early April. As dormancy is partially a function of temperature, cutting and planting of the materials may be required at a moment's notice (dependent on spring weather) to ensure material is planted while still in a dormant state.
- C. CONTRACTOR shall be responsible for all rooting hormones, sealants, paints, and shock-reducing vitamins.
- D. All dormant vegetative plant materials shall be alive and dormant and not dried or otherwise damaged. Payment will not be made for substandard plant material, as determined by OWNER.
- E. Dormant plant materials shall consist of the following species planted at the indicated spacing, unless otherwise specified in Section 0300: Specific Site Requirements:

| <u>Common Name</u> | <u>Scientific Name</u>                                       | <u>Spacing</u>                    |
|--------------------|--------------------------------------------------------------|-----------------------------------|
| Cottonwood         | <i>Populus fremontii</i> (or)<br><i>Populus angustifolia</i> | 1 every 20 feet                   |
| Endemic Willow     | <i>Salix</i> spp.                                            | 2 rows on 3-foot centers - offset |

## 2.05 MULCH

- A. Mulch, when required, shall consist of native hay or straw free of noxious weeds or any foreign material detrimental to plant life. Alfalfa will not be permitted.
- B. Mulch must meet the requirements of the Utah Noxious Weed Act (4-17-3, UCA; Regulation A700-04-09) and the Utah Phytosanitation Act. Mulch must be tested and found clean by an official Utah Department of Agriculture Inspector. CONTRACTOR shall contact the state inspector and arrange

testing. Payment will not be made without certificate of inspection from Agricultural Inspector. Untested mulch may be used only with the prior written approval of the OWNER.

- C. Hay used as mulch may be old, but it shall be dry and not moldy.

## 2.06 EROSION CONTROL BLANKET

- A. Uniform, open weave, erosion control blanket which combines mat of seasoned wood excelsior of consistent thickness with photodegradable plastic mesh (AMXCO Curlex Blankets or equivalent) shall be used on slopes of 2h:1v or greater. The blanket shall be used in combination with straw mulch on sites where slope, soil texture, drainage pattern, or exposure will lead to excessive soil loss from erosion.
- B. Staples for installation of erosion control blanket shall be made of wire (diameter 0.091 inches or greater), U-shaped with 6-inch legs and 1-inch groin. Size and gauge of staples may vary with soil conditions.

## 2.07 TOPSOIL

- A. Mineral soils, with organic matter, free of large roots, rocks, debris, and large weeds, obtained from the areas and to the maximum depths specified on the Drawings, as defined in Section 0270: Site Grading/Earthwork.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Areas to be revegetated are all those which have been disturbed during reclamation construction. Those areas shall include, but are not limited to, portal closure areas, subsidence areas, grading areas, access routes, staging areas, and other areas disturbed by CONTRACTOR in performing the WORK.
- B. CONTRACTOR shall take necessary precautions to avoid disturbance of surrounding native areas and will not travel on previously undisturbed soil, unless directed by OWNER.
- C. When machinery is specified, all operations will be conducted along the contour. On level sites (area permitting) all equipment operations shall be conducted perpendicular to the prevailing wind direction when wind erosion potential is considered to be high.

### 3.02 SITE PREPARATION

- A. CONTRACTOR shall remove and bury foreign materials and debris collected during topsoil spreading. Tree stumps and large shrubs may also be removed, buried, or stockpiled for distribution on the site following top-soiling, as specified in Section 0300 or as directed by OWNER.
- B. Areas that are not fill areas with imported topsoil shall be chiseled or ripped to a depth of 12 inches. This particularly applies to areas that have soils compacted from construction activities and includes haul roads and site access roads. Ripping shall be repeated until the compacted area is loose and friable.
- C. Areas of fill to be covered with imported topsoil shall be chiseled or ripped to a depth of 12 inches. Ripping of fill materials shall be completed by a bulldozer equipped with single or a twin set of ripper shanks. Ripping shall be done on 4-foot centers to a depth of 12 inches and shall follow final grading and precede seedbed material (topsoil) application. Ripping shall be completed at a speed which maximizes ripper shank action and promotes soil material disruption to the specified depth. Ripping shall be repeated until the compacted area is loose and friable.
- D. Topsoil shall be placed on fill areas immediately following ripping to a minimum depth of 24 inches, or other minimum depth as specified in Sections 0270 or 0300, in all areas designated by the OWNER.

### 3.03 MULCHING

- A. All sites not designated for erosion control blanket shall be mulched unless otherwise specified by the OWNER in Section 0300: Specific Site Requirements.
- B. Mulching shall be performed AFTER topsoil is in place, and PRIOR to seeding. Mulch shall be spread by hand or mechanical blower, in an even manner, at a rate of 2,000 pounds per acre over the site to be mulched. Mulch application shall be initiated at the top of the slope, working downhill, where possible.
- C. Mulch shall be crimped with hand tools where equipment cannot gain access or where soil surface roughness (see Part 3.05 below) is already adequate following topsoil distribution and further equipment activity would level the surface.

### 3.04 SEEDBED PREPARATION/SURFACE ROUGHENING

- A. AFTER topsoil placement and mulching, and PRIOR to seeding, the ground surface shall be roughened and gouged to create hummocks and depressions with up to 12 inches of relief. This relief will reduce ground surface wind disturbance and create water catchment basins. Roughening can be achieved by gouging with a backhoe or excavator bucket. Surface roughness can also be created during topsoil distribution by leaving intact the mounds and windrows from each dump truck or loader bucket dump. Furrows, basins, and ridges created by the roughening should run predominantly along the contour to minimize runoff. The roughening process should incorporate the mulch into the top of the soil and some will be buried; however, care should be taken to minimize the mulch buried at depth. CONTRACTOR shall exhibit caution during the gouging and roughening process to ensure that subsurface coal refuse or other unsuitable material is not uncovered or brought up to the surface.
- B. Boulders, both large and small, may be left on site after topsoiling and prior to seeding, either singly or in groupings to blend with the natural surroundings, as directed by OWNER. OWNER may require that additional boulders be placed on site prior to seeding to enhance visual variation and provide wildlife habitat.
- C. Seedbed preparation shall be considered to be complete when the soil surface is completely roughened.
- D. Unless the soil is severely compacted, seedbed preparation shall not be required for discontinuous, isolated areas of disturbance less than 0.05 acres (approximately 2500 square feet or 50 feet by 50 feet), such as areas around mine portal closures.

### 3.05 SEEDING

- A. All seeding shall be broadcasting as directed by OWNER. When broadcast seeding, passes shall be made over the site to be seeded such that even distribution of seed shall be obtained. Broadcast seeding shall take place immediately following the completion of final seedbed preparation. Broadcast seeding shall not be conducted when wind velocities would prohibit even seed distribution. Broadcast seeding shall be followed by hand raking, manual use of a drag chain, or sweeping with sturdy tree or shrub branches to cover seed. This shall be done over the entire site but will not be so extreme as to reduce the extent of soil relief.
- B. Broadcast seeding of large areas shall be done using hand-operated "cyclone-type" mechanical seeders. All seeding equipment used shall be equipped with a metering device and set to the appropriate seeding rate.
- C. Broadcast seeding of small areas of disturbance less than 0.05 acres (approximately 2500 square feet or 50' x 50') may be done by hand scattering. Raking of small areas is not necessary if there is sufficient surface roughness to ensure that seeds will fall into crevices and other micro-topographic depressions so that weather and gravity will cause them to be covered and stay in place.

- D. After completion of the broadcast seeding and seed covering, organic debris such as logs, tree stumps, and grubbed vegetation shall be randomly redistributed across the sites. This shall be done at the OWNER's direction for the purpose of creating visual variation and production of wildlife habitat. Care shall be exhibited to avoid leveling the soil surface.

### 3.06 SEEDLING PLANTING

- A. Planting of bare-root and/or containerized plant seedling stock, when required, shall occur following ground surface roughening. No seedling planting shall be attempted in frozen seedbed material. Seedling spacing shall be as stated in the Section 0300 revegetation plans. Seedling stock shall be delivered to the planting site as close to the time of planting as possible.
- B. At each individual planting site, a circular area (planting circle) shall be cleared of mulch materials or inhibiting debris. The size of the circle shall be approximately 12 inches in diameter. The receiving hole shall then be dug with the depth of the hole extending 2 to 4 inches deeper than necessary for planting. The hole shall be of sufficient size to allow positioning the seedling and tamping the backfill. After the hole has been formed, it shall be partially backfilled with loose soil to allow planting at the proper depth. The seedling shall then be placed in the hole and the hole half backfilled. The hole shall then be filled with water and the remainder of the seedbed material backfilled into the hole as rapidly as possible without displacing water from the hole. The backfill shall be firmly tamped around the seedling. Planting depth shall not exceed the depth at which the seedling was grown in the container.
- C. A basin, which slopes gently from the outside of the planting circle to the seedling stem, shall be formed in the soil to aid in water catchment. The basin shall be mulched with straw (or the mulch replaced when a seedling is planted into a mulched site) and the straw anchored with gravel and seedbed material. Planting holes may be dug by hand or with a power auger. Planting shall be completed randomly over the disturbed area in clumps, as specified in Section 0300.

### 3.07 WILLOW CUTTINGS

- A. Willow Cuttings shall be planted along the borders of watercourses as designated in Section 0300: Specific Site Requirements. Cuttings shall be gathered and planted in the spring (April or May) of the year.
- B. Cuttings shall be collected from locally occurring, dormant plants free from disease. All cuttings shall be of stem material and be approximately two (2) to six (6) feet long. Stem material, 2 to 4 years old at the maximum, shall be considered acceptable for use. The basal cut shall be made at an angle immediately below a node. Cuttings shall be planted immediately after collection, keeping the cuttings moist throughout the process. Should storage be necessary, cuttings shall be placed in a plastic bag with a wet paper towel or cloth wrapped around the bases to prevent desiccation.
- C. To complete the planting procedure, the base end of the cutting shall be pushed into a prepared seedbed such that 1 to 2 feet of cutting remains above the seedbed surface. The base must be in contact with the water table. A metal bar may need to be pounded into the soil to develop a pathway for the willow cutting to follow. The base end shall be dipped into a solution of "Rootone F" prior to planting to aid in root formation.

### 3.08 DORMANT LOG PLANTING

- A. OWNER shall be responsible for locating and securing the necessary permits for obtaining dormant log materials. OWNER shall also identify and tag all materials to be cut, and be on site during the cutting process. CONTRACTOR shall be responsible for cutting, transporting, and handling dormant plant material; site preparation for planting; application of all rooting hormones, transplant shock reducers, paints, and sealers; and placing the plants into the ground at the locations specified in Section 0300.
- B. Dormant logs may be a mix of Narrowleaf Cottonwood, *Populus angustifolia*, and Fremont Cottonwood, *Populus fremontii*. All logs shall be alive and dormant, and not dried or otherwise damaged. All logs shall be between 2 and 6 inches in diameter at the base, and 6 to 18 feet in

length. All dormant logs shall be cut at an angle at the base (rooting) end and flat at the top (vegetative) end. The bottom two feet of the log shall be scored with an ax to expose the cambium layer (see drawing). Side limbs will be removed from the logs and all exposed cuts including the top saw cut shall be sealed with an accepted tree paint.

- C. Holes for dormant logs shall be augured to a depth that reaches into the water table. Planting areas adjacent to streams and rivers may be composed entirely of river rock, or closely packed, competent rock. Auguring through this material into the water table may be extremely difficult. An auger with a chisel bit operating off of a power take off (PTO), some other drilling rig, or a backhoe with a narrow bucket may be necessary. Dormant logs shall be planted in holes that barely accommodate the diameter of the logs. If larger holes are necessary because of digging conditions, the excess volume shall be carefully backfilled under the direction of the OWNER. Dormant log spacing shall be as stated in Section 0300. Planting shall occur in the spring (March, April, or May) of the year.
- D. CONTRACTOR shall make every effort to minimize damage to vegetation and environmental disturbance at the tree source area. Unused or excess brush, branch trimmings, logs, etc. shall be disposed of properly. CONTRACTOR shall leave the site neat and in a condition acceptable to OWNER and the landowner.

### 3.09 EROSION CONTROL BLANKET

- A. The area to be covered shall be properly prepared and seeded prior to application of erosion control blanket. All roads and debris shall be removed prior to seeding and installation.
- B. Seeded slopes shall be covered with excelsior-type erosion control blanket where shown on the Drawings.
- C. CONTRACTOR shall roll blanket down over slopes without stretching or pulling and lay blanket smoothly on soil surface, burying and securing the top end of each section in a narrow (6-inch) trench. CONTRACTOR shall leave 12 inches overlap from top roll over bottom roll and four inches overlap over adjacent section. The blanket shall be placed with the netting on top and the fibers in contact with the soil over the entire area.
- D. The staples shall be installed per erosion control netting manufacturer's recommendations and spaced over the blanket on no less than 6-foot intervals. Outside edges and overlaps shall be at 36-inch intervals.
- E. CONTRACTOR shall lightly dress slopes (manually) with topsoil and cobbles to ensure close contact between blanket and soil.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

- A. Measurement will be based on and compared to the quantities identified in the bid sheets, these Specifications and Drawings for each mine site. The OWNER will request intermediate measurements to determine progress of the WORK.
- B. Measurements by CONTRACTOR will be required for a given mine site for acres of revegetation and/or square yards of erosion control blanket. Such measurements will be used by the OWNER for comparison with the estimated quantities shown on the bid sheets.
- C. Should the CONTRACTOR estimate the quantity of materials to be greater than 15% more than the quantities shown in the Bid Schedule, a CHANGE ORDER must be negotiated with the OWNER for ADDITIONAL WORK prior to the CONTRACTOR undertaking ADDITIONAL WORK. Measurement for quantities shall be determined prior to the WORK.
- D. When the actual quantity of Revegetation performed as determined by measurement is greater than 15% less than the estimated quantity on the bid sheet, the OWNER will negotiate a reduction in the

BID PRICE by the amount of variance using the UNIT PRICE. This adjustment shall be executed by a CHANGE ORDER.

#### 4.02 PAYMENTS

- A. Payment for Revegetation will be for each mine site at the BID PRICE, as modified by any CHANGE ORDERS. No partial payments will be made.
- B. Payment at the UNIT PRICE for additional quantities of Revegetation will be made for quantities greater than 15 percent in excess of the estimated quantity shown on the bid sheet for a given mine site. Reduction of payment for lesser quantities of Revegetation will also be made by the OWNER for quantities greater than 15% below the estimated quantity shown on the bid sheet for a given mine. Such unit price payment will require approval of the OWNER, and will be full compensation for additional or reduced revegetation and/or erosion control blanket.
- C. Payment will not be made without:
  - 1. Seed: seed testing certification, certification to be submitted with invoice, and
  - 2. Mulch [only if specified]: Phytosanitary Certificate for certification of compliance with the Utah Noxious Weed Act. Certification shall be submitted with invoice.

END OF SECTION 0290

## **0300 Specific Site Requirements (Gray Pages)**

PART 1 – GENERAL

PART 2 – EXECUTION

PART 3 – LOCATIONS AND WORK DESCRIPTIONS

|                               |         |
|-------------------------------|---------|
| SITE GROUP 1 - T9S, R21E AREA | 5 SITES |
|-------------------------------|---------|

|                                |         |
|--------------------------------|---------|
| SITE GROUP 2 - T10S, R21E AREA | 9 SITES |
|--------------------------------|---------|

## **0300 Specific Site Requirements**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This section describes the location, the features present, and the WORK to be performed at the Bonanza Project located in Uintah County, Utah. The items of the WORK shall be performed according to the appropriate sections of these specifications.
- B. It is the intent of these Specifications that the site-specific scope of WORK is as described in this Section. The General Technical Specifications, Sections 0200 through 0290, outline WORK broadly applicable to all abandoned mine reclamation situations and that may not be required at each mine site in this project. Where there is a conflict between Section 0300 and the General Technical Specifications (0200's), Section 0300 shall govern.
- C. The access, site description and specific requirements for each closure method are described in this Section. Details and dimensions are shown on the drawings in Appendix E. CONTRACTOR shall be aware that the dimensions on the Drawings are shown as typical. CONTRACTOR shall also be aware that minimum or maximum dimensions on the Drawings or given in the Specifications are specific and are to be adhered to unless the OWNER approves changes in writing. The quantities presented in the specific site sections should be considered an estimate with a tolerance of plus or minus 15 percent. CONTRACTOR shall visit each site and determine the quantities and amounts required in performing the WORK as intended in these Specifications and on the Drawings.

#### **1.02 PROJECT LOCATION AND DESCRIPTION**

- A. The Bonanza Project area consists of approximately 14 identified abandoned mine openings. The mine openings consist of vertical shafts. The openings occur in a wide range of sizes, configurations, and conditions.
- B. Descriptions of each of the sites and their locations are presented below. A listing of all sites and the general location within Utah is shown on the General Location Map (Map D1). The actual open site locations are shown on the Maps D2 through D8 in Appendix D. Requirements for each closure method are described in the Technical Specifications and shown on the drawings located in Appendix E. The access, site description and specific requirements for each closure method are described in this Section. CONTRACTOR shall be aware that the dimensions on the Drawings are shown as typical. CONTRACTOR shall also be aware that minimum or maximum dimensions on the Drawings or given in the Specifications are specific and are to be adhered to unless such changes are approved in writing by the OWNER. The quantities presented in the specific site sections should be considered an estimate with a tolerance of plus or minus 15 percent. CONTRACTOR shall visit each site and determine the quantities and amounts required in performing the WORK as intended in these Specifications and on the Drawings. The schedule of mine openings, dimensions, method of closure, estimated quantities, access and backfill borrow locations for each site is presented in Appendix B, Mine Closure Schedule.
- C. The schedule of mine openings, dimensions, method of closure, estimated quantities, access and backfill borrow locations for each site is presented in Appendix B, Mine Closure Schedule.
- D. The Bonanza Project is mapped on the Big Pack Mountain NE USGS 7.5 minute quadrangle.

#### **1.03 MINE OPENING LOCATIONS AND DESCRIPTIONS**

- A. Locations, descriptions, approximate dimensions, closure methods, and map references of each mine opening (site) are provided in the table in Appendix B. Detailed locations of the sites are presented on the maps in Appendix D. Note that mine symbols may be plotted on the maps offset

slightly from their true locations due to terrain interference with GPS surveys and the way the mapping software treats shaft symbols.

- B. Site ID Numbers (Tag Numbers): Each mine opening or feature is identified by a unique site identification number such as 3411308HO002. The ID number consists of seven digits, two letters, and three digits. The first digit indicates the quadrant around the Salt Lake baseline and meridian (or the Uinta special meridian). Townships south and east of the SLBM are coded "4." The second and third digits indicate the township, the fourth and fifth digits indicate the range, and the sixth and seventh digits indicate the section. These numbers are followed by letters indicating the type of mine opening or feature (H = horizontal adit, I = inclined adit, V = vertical shaft, SH = subsidence hole, PR = prospect, TR = trench, PT = open pit,) and, in the case of shafts and adits, letters indicating whether the mine is open (O) or closed (C). These letters are followed by numbers that are sequential numbers assigned as the openings were encountered during the field inventory. Thus, site number 4060318HO003 is the third horizontal opening (HO) inventoried in Township 6 South, Range 3 East, Section 18. The leading zeros in the sequential number part of the ID number are frequently omitted (i.e. HO3 instead of HO003).
- C. Identifying Sites: Sites in the field are marked two ways, with wooden stakes and steel washers. The 1"x2" wooden stakes have the full ID number written in ink. The washers are 1½" diameter and are bolted to rock with masonry anchors. They are stamped with only the opening ID, without the numbers for quadrant, township, range, and section (e.g. just "HO3"). Because of vandalism or weather, many mine ID markers are illegible or are missing altogether. Some mine features, particularly small prospects, are not marked. In a very few cases, sites have been renumbered, and ID numbers on tags may not match the ID number in these Specifications. CONTRACTOR will have to rely on the site location maps and the descriptions in Appendix B to identify mine sites. OWNER's Contract Representative will provide assistance in identifying the mine openings.

#### 1.04 PROJECT SITE GROUPINGS

- A. The mine sites in the Bonanza Project have been organized into two subgroups or areas based on geographical proximity and access considerations. These subareas are the basis for the area detail maps in Appendix D and the site groupings in the Bid Schedule and Appendix B. The two groups or subareas are: Site Group 1 – T9S, R21E and Site Group 2 – T10 S, R21E.

| <u>GROUP NAME</u>                    | <u>TAG NUMBER</u> |
|--------------------------------------|-------------------|
| SITE GROUP 1 T9S, R21E<br>(5 sites)  | 4092132VO001      |
|                                      | 4092132VO002      |
|                                      | 4092132VO003      |
|                                      | 4092132VO004      |
|                                      | 4092132VO005      |
| SITE GROUP 2 T10S, R21E<br>(9 sites) | 4102129VO001      |
|                                      | 4102129VO002      |
|                                      | 4102129VO003      |
|                                      | 4102129VO004      |
|                                      | 4102129VO005      |
|                                      | 4102129VO006      |
|                                      | 4102129VO007      |
|                                      | 4102132VO001      |
|                                      | 4102132VO002      |

#### 1.05 PROJECT AREA ACCESS

- A. This section describes the access to the work areas and the individual sites within each area. The work to be performed on the Bonanza Project is located in three sections located south of Vernal, Utah. Nine of the sites are within Township 10 South, Range 21 East; four sites are located in Township 9 South, Range 21 East; all are located in Uintah County, Utah. The bid package descriptions are divided into two major groupings containing the 14 total open mine sites as described below.

- B. General access to all of the sites in the Bonanza Project will be described from the center of Vernal Utah, the county seat of Uintah County. Vernal is located in northeastern Utah on U.S. Route 40/191, approximately three hours driving time east of Salt Lake City and very close to the Colorado border. From the courthouse (on U.S. Route 40/191 in the center of Vernal), head west on U.S. Route 40/191 approximately 17 miles to a sign pointing south (left) to Ouray Bridge. The highway towards Ouray Bridge is Utah State Route 88. Travel south on Route 88 to the little town of Ouray and continue across the Green River at the Ouray Bridge (south 17 miles from the intersection of U.S. Route 40 and Utah State Route 88). The road forks immediately after the bridge. The access to the various sites will be described from the bridge.

#### 1.06 LAND STATUS

- A. The Bonanza Project area contains land owned by the School and Institutional Trust Lands Administration. OWNER is responsible for obtaining the necessary rights of entry to perform the reclamation work.

### PART 2 - SPECIAL CONDITIONS AND RESTRICTIONS

#### 2.01 CULTURAL RESOURCE PROTECTION

- A. The Bonanza Project area has five mine openings determined to be on significant historical sites eligible for listing on the National Register of Historic Places. All reclamation activities shall be conducted in a manner sensitive to the historic values and resources found in the area. CONTRACTOR shall ensure that all construction crew members are aware of the cultural sensitivity of the area and the cultural resource protection requirements.
- B. While features such as cabins, headframes, and ore chutes are obviously important, many of the historically important features present in the project area are not readily apparent. For example, ore sorting areas may appear simply as a patch of differently colored rock on a dump. Much of what is significant at one location might typically be dismissed as "trash" somewhere else. Often, the mine opening itself, or cribbing within an opening, is important and needs to be treated appropriately.
- C. Access improvement, excavation, and other ground disturbing activities shall be limited to the minimum necessary to achieve the goals of the WORK. Alteration or removal of structures or structural elements of mine openings, such as props, lagging, cribbing, retaining walls, foundations, and doorways shall be limited to the minimum necessary to safely and effectively install the closure. Any such alteration shall be planned in consultation with and executed as directed by the OWNER.
- D. One of the key features of the project area that makes the mining district historically important is its surviving "historic landscape", the overall appearance of the terrain dotted with mine dumps and workings offering a glimpse of the past. To preserve this historic appearance, when possible mine dumps used as a source of backfill shall be excavated in a way that maintains the outer lines and grades of the dump. This can be done by uniformly removing material from all surfaces, by removing material from the top down, by slightly "hollowing out" the dump, or by removing one lobe of a multi-lobed dump. The idea is to avoid leaving the dump with an uneven, gouged look.
- E. Removal of historic or prehistoric artifacts or rock specimens is prohibited. This includes, but is not limited to, bottles, bottle fragments, china and glass fragments, tools, tin cans, buckets, pipe, wire, nails, spikes, bolts, track, machinery, ore cars, vehicles, lumber and other wood, arrowheads and other stone tools, ore samples, petrified wood, and fossils.
- F. CONTRACTOR shall stop work and notify OWNER immediately if human burial remains are discovered.
- G. There are possible paleontological resources (fossils) within the project boundaries. No excavation of rock will be permitted within the project area.

## 2.02 BAT CONSERVATION

- A. OWNER has performed surveys to determine which mines are used for bat habitat. Where bats are present in a mine, they will be excluded from the mine prior to installing airtight closures (see Section 0250, Part 3.01.F). Sites requiring exclusion prior to closure are indicated in Appendix B.
- B. The length of the exclusion period may be reduced from one week to three fair weather days with OWNER's approval. Rainy or cold weather inhibits bat activity and will increase the length of the exclusion accordingly, up to the one week maximum.
- C. The heavy recreational use of the project area increases the possibility that vandals may damage or remove the chicken wire seals during the exclusion period. Should this occur, damaged seals shall be replaced and the exclusion period started over.
- D. The exclusion process is effective only in warm seasons when bats are active. To prevent entombing hibernating bats, sites indicated in Appendix B as requiring exclusion prior to closure shall not be closed during the cold season (from October 31 to March 31). Closure of these sites shall be postponed to the following warm season. Cold season closures may be performed following an internal inspection for hibernating bats. Internal inspections shall be performed by the OWNER and are subject to the availability of the OWNER's bat inspection team.
- E. Vertical shafts covered with chicken wire for bat exclusion shall be flagged with warning tape.

## 2.03 BIRD CONSERVATION

- A. A number of state and federal laws or policies protect several bird species. CONTRACTOR shall avoid or minimize disturbance to protected birds as outlined in this section. Generally this is done by scheduling work to avoid sensitive breeding activity and by minimizing habitat disturbance.
- B. During spring nesting and fledging (January 15 to August 31) OWNER will perform line-of-site visual surveys for raptor nests in the vicinity of the mine sites. If nests are found, CONTRACTOR shall reschedule work at those sites until after August 31.

## 2.04 LAND PROTECTION

- A. Trash, containers, wrappings, empty mortar and concrete mix bags, concrete block fragments, rebar cuttings, welding rod scraps, waste PUF, pallets, water jugs, buckets, broken tools, discarded materials, food wrappers, beverage containers, paper towels, and other such litter generated by the reclamation activities shall be kept contained during construction and shall be cleaned up and removed from the site upon completion.
- B. CONTRACTOR shall exercise care with open flames when welding or cutting to avoid starting range fires. CONTRACTOR shall submit a written range fire prevention and fire response plan to OWNER at the start of construction.
- C. CONTRACTOR shall be responsible to reimburse landowners or lease holders for livestock or other property lost, injured, or damaged by CONTRACTOR's operations on access roads.

## 2.05 ACCESS RESTRICTIONS

- A. Three mine openings in Section 29 require access around a high pressure gas line paralleling the existing roadway. Access to the sites will be along the west side of the pipeline in a manner as to avoid vegetation. Mechanized access to the sites is limited to a single trip on the designated route up the wash bottom. Ground disturbance shall be minimized. Vehicle tracks shall be raked out thoroughly upon completion.
- B. Vehicles shall stay on existing roadways as much as possible and avoid cross-country trips across undisturbed areas except where necessary. CONTRACTOR shall select from a pre-determined number of staging areas identified in the specifications and secure all necessary permits, including camping permits, from the applicable land management agency.

## 2.07 WORKER HEALTH AND SAFETY

- A. The CONTRACTOR shall comply with all applicable standards of the Mine Safety and Health Administration (MSHA) published in "Safety and Health Standards Applicable to Underground Metal and Nonmetal Mining and Milling Operations" (30 CFR Part 57), in particular sections 57.5037 through 57.5047.
- B. Rodents often nest in abandoned mines and leave accumulations of droppings and nest debris. In theory, these nests and droppings could host the potentially lethal Hantavirus, although no mine closure work has ever been linked to a case of Hantavirus. As a precaution, workers should avoid stirring up dust or rodent droppings in mines and use standard hygiene and sanitation practices (washing before eating, etc.). Workers are encouraged to learn to recognize the symptoms of Hantavirus infection and seek proper medical attention if indicated.
- C. The heavy reliance on manual labor for this project and the steep, rugged terrain increase the probability of orthopedic and trauma injuries. Standard safety gear (hard hat, steel-toed shoes) are required for all personnel. Fatigue, heat stress, and dehydration are inherent medical risks of heavy manual labor in desert environments. Frostbite and hypothermia are risks of winter work. Workers should take appropriate precautions for the site conditions.
- D. CONTRACTOR is required to hold regular safety meetings and is encouraged to have a response plan in place in the event of accidents, personal injury, animal bites, or other medical emergency.
- F. All of Uintah County is covered by 911 emergency telephone service, but the project area may have unreliable cell phone coverage.

## PART 3 - EXECUTION

### 3.01 WORK REQUIRED AT ALL SITES

The following WORK shall be performed at the sites:

- A. Improve access to the site along the routes described to the degree required to conduct the WORK. All access improvement shall be performed in accordance with Section 0230: Access Improvement. Where access has been created, the access shall be closed following construction in accordance with Section 0230: Access Improvement. Access grading shall be in accordance with Section 0270: Site Grading/Earthwork.
- B. Items specifically identified for demolition shall be demolished and disposed of in accordance with Section 0240: Demolition and Clean-up.
- C. Trash and debris created during construction shall be removed and disposed of in accordance with Section 0240: Demolition and Clean-up.
- D. Mine openings and subsidence holes shall be sealed or closed in accordance with the mine closure method identified for the specific site as specified in this Section and in accordance with Section 0250: Mine Closures, and Section 0253: Bat Gate and Shaft Grate Installation, and as shown on the Technical Specification Design Drawings in Appendix E.
- E. Site grading and earthwork required shall be performed in accordance with Section 0270: Site Grading/Earthwork.
- F. CONTRACTOR shall finish all openings reclaimed by the backfill closure method by mounding the collar and/or building berms or ditches as appropriate for each site. The purpose of the mounds, ditches or berms is to divert runoff around the edge of the backfill to keep drainage from contributing to deterioration and saturation of the fill. Typical details for mounds, berms and ditches are described in Section 0250: Mine Closures, and are shown on the Technical Specification Design Drawings in Appendix E.

- G. CONTRACTOR shall clear any timber or debris caught in the upper portion of vertical openings that may cause bridging of the backfill. Timbers removed from mine openings do not have to be disposed of. They must be left on site. All material other than wood removed from a mine opening shall be hauled off the site and disposed of at an approved landfill or used for scrap.
- H. The location of backfill material for each site is specified in Appendix B, Mine Closure Schedule and within each site description as directed by the OWNER. Adjacent or nearby dumps will be used prior to use of natural soil material. Where existing dumps do not contain adequate material to backfill the open mine site, it is assumed for revegetation purposes that 1 foot of material over an appropriately sized area will be used to meet the backfill requirements.
- I. Finished grading of backfill pursuant to Sections 0250: Mine Closures; Section 0270: Site Grading/Earthwork; and this Section 0300: Specific Site Requirements will be completed prior to completion of the CONTRACT. For all sites where revegetation is planned (See Appendix B), the revegetation shall be performed in accordance with Section 0290: Revegetation.
- J. Rights of Entry from the Landowners have been obtained on all the sites contained in the WORK.
- K. CONTRACTOR shall protect all gas/oil pipelines within the project area during construction activities. If access requires crossing any pipeline, the pipeline will be adequately protected to avoid any potential damage to the pipeline.
- L. Polyurethane foam (PUF) closures shall be installed in a controlled manner that minimizes spatter and overspray of foam onto historic structures and the ground. Masking of headframes, collar cribbing, casings, and other structural elements with plastic or paper sheeting may be necessary to protect them from spatter and overspray. CONTRACTOR shall clean up any misapplied foam and masking materials.
- M. Polyurethane foam (PUF) closure of 6 shafts is scheduled in order to retain the historic fabric of these mine openings. The following table provides estimated quantities of PUF, drain pipe, concrete and fill for these 4 shaft closures. **The PUF closures are bid on a lump sum basis per mine opening installed.**

| Shaft Tag Number | Width (ft) | Length (ft) | PUF Thickness (ft) | PUF Vol. (Ft <sup>3</sup> ) | PUF Vol. (CY) | Drain Pipe Length (ft) | Concrete Vol. (Ft <sup>3</sup> ) | Concrete Vol. (CY) | Depth To Form (ft) |
|------------------|------------|-------------|--------------------|-----------------------------|---------------|------------------------|----------------------------------|--------------------|--------------------|
| 4092132VO001     | 3.0        | 12.0        | 9.0                | 324                         | 12.0          | 10.5                   | 36.0                             | 1.3                | 12.0               |
| 4092132VO002     | 2.0        | 14.0        | 6.0                | 168                         | 6.2           | 7.5                    | 28.0                             | 1.0                | 9.0                |
| 4092132VO003     | 3.0        | 11.0        | 9.0                | 297                         | 11.0          | 10.5                   | 33.0                             | 1.2                | 12.0               |
| 4092132VO004     | 1.5        | 6.5         | 4.5                | 44                          | 1.6           | 6.0                    | 9.8                              | 0.4                | 5.5                |
| 4092132VO005     | 3.5        | 11.0        | 10.5               | 404                         | 15.0          | 12.0                   | 38.5                             | 1.4                | 13.5               |
| 4102132VO001     | 1.5        | 47          | 4.5                | 317                         | 11.8          | 6.0                    | 70.5                             | 2.6                | 7.5                |
| <b>TOTALS:</b>   |            |             |                    | 1,554                       | 457.6         | 52.5                   | 215.8                            | 7.9                |                    |

Abbreviations used in table:

ft = distance in feet      Vol. = Volume      Ft<sup>3</sup> = Cubic Feet      CY = Cubic Yards

The top surface of each polyurethane foam (PUF) seal will be recessed 3 feet below grade within the shaft. Completion of the closure includes placing a one (1) foot concrete cover graded to the center steel drain pipe. One (1) foot of course rock fill will be placed on top of concrete on each PUF closure leaving about one (1) foot of the mine opening to retain the historic nature of the mine opening.

- N. The ventilation/drain pipes used in the polyurethane foam (PUF) shaft closures shall be 2-inch diameter galvanized steel as specified in Section 0254, Part 2.01.H and as shown on the Technical Specification Design Drawings in Appendix E.

- O. Due to limited coversoil and rock backfill, revegetation may be limited in areas of bedrock outcroppings. Finished grading of backfill pursuant to Sections 0250, Mine Closures; Section 0270, Site Grading/Earthwork; and this Section 0300, Specific Site Requirements will be completed prior to completion of the CONTRACT. For those sites where revegetation is planned, the revegetation shall be performed in accordance with Section 0290, Revegetation.

### 3.02 CONSTRUCTION SCHEDULING

- A. Notice to proceed with construction is contingent upon OWNER receiving authorization from the U.S. Office of Surface Mining. OWNER expects authorization to be in place by the bid date. However, if lacking, WORK will be postponed accordingly.
- B. Work Priorities: No Work priorities are required for completion of the project. CONTRACTOR shall organize the execution of the WORK to minimize the time required to complete the project.
- C. Most of the site reclamation for the Bonanza Project is not weather dependent. It is conceivable that the project work could be temporarily suspended for wet ground conditions. The CONTRACTOR shall account for this potential shutdown within the mobilization/demobilization cost. The mine closure costs quoted on the bid schedule apply for the duration of the reclamation. The start-up date for resumption of WORK suspended due to adverse weather or other conditions will be determined by OWNER in consultation with CONTRACTOR and will depend upon the nature of the uncompleted WORK.

## PART 4 - PROJECT DESCRIPTION

### 4.01 WORK INCLUDED

- A. The Bonanza Project area consists of numerous vertical openings left from abandoned gilsonite mines in the area south of the town of Vernal, Uintah County, Utah. The town of Vernal is located in northeastern Utah on U.S. Route 40/191, approximately three hours driving time east of Salt Lake City and very close to the Colorado border. Elevations across the project range from 4,900 to 5,400 feet
- B. The Bonanza Project area encompasses 14 vertical openings left from abandoned gilsonite mines. Gilsonite, a naturally occurring hydrocarbon, was discovered in the area in the mid-to-late 1800's. The Uintah Basin of Utah and Colorado is one of the few locations in the world where gilsonite is found. It has been mined in this location for over 110 years, with mining still occurring in the area. All of the open abandoned sites are accessible by four-wheel-drive trucks. Some of the sites require short hiking to reach the actual openings. All of the mine openings are small in aerial extent and disturbance to the surrounding topography.
- C. Appendix A contains the revegetation seed mixture to be used on the sites specified. Revegetation is currently planned for some sites being reclaimed using dirt or loose material, which might support vegetation as indicated on a site-by-site basis. The OWNER anticipates that construction disturbance will be limited to the immediate vicinity of the mine openings. However, if any excessive or unauthorized disturbance takes place by the CONTRACTOR, it must be repaired and revegetated at the CONTRACTOR'S expense. All revegetation required will be completed in accordance with Technical Specification Section 0290-Revegetation.
- D. Appendix B lists the mine sites by type of closure and contains additional information on each site including dimensions, access, backfill source, reclamation action, reclamation method and quantities required.
- E. Appendix C contains the Daily Construction Progress Report and Contractor Performance Rating Sheet.
- F. Appendix D contains the project location maps for all areas. The entire reclamation project area is shown on the General Location Map (Map D1).
- G. Appendix E contains the Technical Specification Design Drawings.

#### 4.02 PROJECT GROUPING DESCRIPTIONS

- A. This section describes the access to the work areas and the individual sites within each area. The work to be performed on the Bonanza Project is located in three sections located south of Vernal, Utah. Nine of the sites are within Township 10 South, Range 21 East; four sites are located in Township 9 South, Range 21 East; all are located in Uintah County, Utah. The bid package descriptions are divided into two major groupings containing the 14 total open mine sites as described below.
- B. General access to all of the sites in the Bonanza Project will be described from the center of Vernal Utah, the county seat of Uintah County. Vernal is located in northeastern Utah on U.S. Route 40/191, approximately three hours driving time east of Salt Lake City and very close to the Colorado border. From the courthouse (on U.S. Route 40/191 in the center of Vernal), head west on U.S. Route 40/191 approximately 17 miles to a sign pointing south (left) to Ouray Bridge. The highway towards Ouray Bridge is Utah State Route 88. Travel south on Route 88 to the little town of Ouray and continue across the Green River at the Ouray Bridge (south 17 miles from the intersection of U.S. Route 40 and Utah State Route 88). The road forks immediately after the bridge. The access to the various sites will be described from the bridge.
- C. The two major groupings are the T9S, R21E Site Group consisting of 5 open shafts in Section 32 and the T10S, R21E Site Group consisting of 7 open shafts in Section 29 and 2 open shafts in Section 32. Access to the two major areas is described below. Four wheel drive vehicles, crawler mounted equipment, or occasionally, foot travel may be required to reach individual sites. Access varies by site group and individual site. Access to each individual site is described under that site.

#### 4.03 TOWNSHIP 9 SOUTH, RANGE 21 EAST GROUP

##### A. GENERAL SUBGROUP LOCATION AND ACCESS

The T9S, R21E Site Group includes five (5) open sites. To access these 5 sites, continue straight ahead (south fork) after crossing the Ouray Bridge (south on Utah State Route 88, 17 miles from the intersection of U.S. Route 40 and Utah State Route 88). Stay to the right (south) and continue for 6.5 miles where a gravel road exits to the left (east) from the main paved road. Take this gravel road for 2.2 miles at which time you cross a natural gas pipeline and the road forks again. Either road will take you to the open sites in this section, however the straight road along the pipeline will be described as follows. At the above intersection, take the left fork (slightly northeast) along the pipeline and follow this pipeline road for 2.7 miles where you come to an almost perpendicular intersection. Take the road to the right (south) and follow this road approximately 0.4 mile and there will be a triangular intersection in the road. The open sites and black gilsonite cuttings are visible from this intersection. Stay to the left (southeast) for another 0.1-mile and the rough access to the open sites in this section should be apparent. All five sites are located along a 150-yard strike length section of gilsonite outcropping. The access to the four sites in Section 32, T9S, R21E, will be described from this point.

##### B. INDIVIDUAL SITE LOCATIONS -- DESCRIPTIONS AND WORK REQUIRED

The locations of the T9S, R21E Site Group mine sites are shown on Map Sheets D2 and D3, which are included in Appendix D.

##### 1. Site 4092132 VO001 (PUF - Historic, Bats)

###### a. Location and Description

Vertical opening 4092132VO001 is located in the SW $\frac{1}{4}$  NW $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 32, T09S, R21E at an elevation of 4953 feet. Site VO001 is located roughly 100 yards east, northeast of the vehicle stop point described above. There is no current vehicle access to this site; however, the terrain is very gentle and relatively flat. This vertical opening is evidenced by a small mound of surrounding black gilsonite cuttings. The site is openly exposed with no fencing or signs present. A small amount of debris consisting of broken glass, wood, metal and china is present. Dimensions of the vertical opening at the collar are 3.0 feet wide by 12.0 feet long. The opening

appears to narrow slightly with depth to an inside dimension of 2.5 feet side by 9.0 feet long at 4 feet below the collar. The opening is 107.5 feet deep. There are timber stull supports visible below the surface. The site is surrounded by broken rocks, earth, and small mounds of gilsonite, however, no formal dump exists at this site.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

Access to the site will need improvement prior to the commencement of reclamation. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect any mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4092132VO001. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 12 feet by 3 feet wide. The top of the finished concrete/PUF cap shall be 2 feet below the level of the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

The gilsonite vein is very continuous along strike length and appears to be near vertical in dip. The distance between 4092132VO001 and 4092132VO002 is approximately 114 feet, between VO002-VO004 approximately 100 feet, between VO004-VO003 approximately 200 feet, and between VO001-VO005 approximately 236 feet. The entire strike length between VO003 and VO005 is therefore approximately 650 feet, and is covered with broken rock with broken black gilsonite exposed at the surface. It is unknown whether a thin crown pillar exists in this area. The CONTRACTOR will first probe the 650-foot strike length of the gilsonite vein between 4092132VO003 and 4092132VO005 to test the thickness and integrity of any remaining crown pillar. An auger type drill or air-track type drill will be used for probing. The diameter of the drill holes will be kept to a minimum required to verify the thickness of the crown pillar. The holes will be on 10-foot centers to a minimum depth of 15 feet, for a total of approximately 61 holes. If it is determined that this area has already been filled or that the crown pillar is thicker than 15 feet, then backfilling and re-grading of the drill holes with cuttings and reclaiming the individual openings is all that is necessary.

If it is determined that a crown pillar of less than 15 feet vertical thickness exists, then the pillar shall be excavated to a depth of approximately 2 feet by the most expeditious method; either drilling with moil type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in accordance with the specifications listed under Crown Pillar Excavation, Section 0255. The material removed from the crown pillar will be replaced into the trench as backfill. One foot of reinforced concrete shall be placed over the gilsonite to bridge the crown pillar. The concrete reinforcing shall be a single two-foot mat of number 6 rebar steel doweled one-foot into the walls on 8-foot centers. All rebar shall be imbedded in the concrete a minimum of three inches at any point. The removed crown pillar material shall then be replaced

over the concrete slab to approximate the pre-construction configuration of the vein. A minimum of 6 feet of gilsonite shall be required for the bottom form for installation of the concrete cap. If the crown pillar is less than 8 feet in thickness, a bottom form shall be required for the installation of the concrete cap. Bottom form shall consist of PUF with thickness calculated for three times the vein width. The gilsonite shall be excavated by the most expeditious method; either drilling with moil type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in accordance with the specifications listed under Crown Pillar Excavation, Section 0255. The material removed from the crown pillar will be replaced into the trench as backfill. No personnel shall be allowed in the excavated trench. It should be noted that even though these openings are open to the surface, trapped gilsonite dust can be very explosive. In the event that trapped dust may exist, flammable products or procedures should not be used in testing or removing the gilsonite crown pillar. If a thin crown pillar is present, it is anticipated that as much as 67.1 cubic yards of concrete would be necessary to fill the resultant opening. The volume of PUF that may be required is unknown until drilling proves thickness of the crown pillar. Should a crown pillar greater than 15 feet be found between 4092132VO005 and 4092132VO003, the reclamation will consist of backfilling of the exploration drill holes with cuttings. Any regrading will blend with the adjacent terrain to promote positive drainage. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

2. Site 4092132 VO002 (PUF – Historic, Bats)

a. Location and Description

Vertical opening 4092132VO002 is located in the SW $\frac{1}{4}$  NW $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 32, T09S, R21E at an elevation of 4956 feet. Site VO002 is located 114 feet to the northwest (azimuth 310 degrees) from VO001. Vehicle access is possible nearly to the edge of this site from the intersection mentioned above. The terrain is very gentle and relatively flat. This vertical opening is evidenced by a small mound of surrounding black gilsonite cuttings. The site is openly exposed with no fencing or signs present. Very little debris is present. Dimensions of the vertical opening are 2.0 feet wide by 14.0 feet long. The opening is 33.0 feet deep. There are timber stull supports and steel cable visible below the surface. The site is surrounded by broken rocks, earth, and small mounds of gilsonite, but the dump is non-existent.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

Access to the site will need improvement prior to the commencement of reclamation. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect any mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4092132VO002. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 14 feet by 2 feet wide. The top of the finished concrete/PUF cap shall be 2 feet below the level of the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and

installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

3. Site 4092132 VO003 (PUF – Historic)

a. Location and Description

Vertical opening 4092132VO003 is located in the NE $\frac{1}{4}$  NE $\frac{1}{4}$  NW $\frac{1}{4}$  of Section 32, T09S, R21E at an elevation of 4958 feet. Site VO003 is located 200 feet to the northwest (azimuth 310 degrees) from VO004. Vehicle access is possible nearly to the edge of this site from the intersection mentioned above. The terrain is very gentle and relatively flat. This vertical opening is evidenced by a small mound of surrounding black gilsonite cuttings and old wooden cribbed shaft collar structures extending approximately 1.5 feet above the ground surface. The site is openly exposed with no fencing or signs present. Dimensions of the vertical opening are 3.0 feet wide by 11.0 feet long. The opening is over 100 feet deep. Debris consists of piles of old wood and steel cables, one of which extends down the shaft opening. There is a concrete slab and metal workings (probable hoist foundation) located 25 feet to the northeast, however, nothing that would be deemed unsafe. There are shaft timbers (round shaft cribbing and wooden plank guides) and steel cable visible below the surface. The site is surrounded by broken rocks, earth, and small mounds of gilsonite, but no dump site.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

Access to the site will need improvement prior to the commencement of reclamation. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect the mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4092132VO003. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 11 feet by 3 feet wide. The top of the finished concrete/PUF cap shall be 2 feet below the level of the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

4. Site 4092132 VO004 (PUF - Historic)

a. Location and Description

Vertical opening 4092132VO004 is located in the NE $\frac{1}{4}$  NE $\frac{1}{4}$  NW $\frac{1}{4}$  of Section 32, T09S, R21E at an elevation of 4958 feet. Site VO004 is located 100 feet to the northwest (azimuth 310 degrees) from VO002. Vehicle access is possible nearly to the edge of this site from the intersection mentioned above. The terrain is very gentle and relatively flat. This vertical opening

is evidenced by a cribbed wooden opening surrounded by old wooden planks and miscellaneous timbers. The wooden cribbing extends less than 6 inches above the surface. The site is openly exposed with no fencing or signs present. Dimensions of the vertical opening are 1.5 feet wide by 6.5 feet long. The opening is apparently 5.5 feet deep. The bottom of the opening appears to be filled to a depth of 5.5 feet below the surface. Debris consists of piles of old wood and nails. The vertical opening is cribbed to its apparent depth. The site is surrounded by broken rocks, earth, and small mounds of gilsonite. No dump is present at this site.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

Access to the site will need improvement prior to the commencement of reclamation. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect any mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4092132VO004. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 6.5 feet by 1.5 feet wide. The top of the finished concrete/PUF cap shall be level with the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

5. Site 4092132 VO005 (PUF – Historic, Bats)

a. Location and Description

Vertical opening 4092132VO005 is located in the NE $\frac{1}{4}$  NE $\frac{1}{4}$  NW $\frac{1}{4}$  of Section 32, T09S, R21E at an elevation of 4948 feet. Site VO005 is located 236 feet to the southeast (azimuth 130 degrees) from VO001. Vehicle access is possible nearly to the edge of this site from the intersection mentioned above. The terrain is very gentle and relatively flat. This vertical opening is evidenced by a cribbed wooden opening surrounded by old wooden planks and miscellaneous timbers. The wooden cribbing extends 7 feet above the surface. The site is openly exposed with no fencing or signs present. Dimensions of the vertical opening are 3.5 feet wide by 11 feet long. The opening is greater than 50 feet deep. The vertical opening is cribbed to greater than 5 a foot depth. The bottom of the opening appears to be filled to a depth of 5.5 feet below the surface. A U-shaped terrace is located to the southeast of the shaft with dimensions of 46 feet by 23 feet with a maximum height of 4.5 feet. Debris consists of scattered old wood and nails. The site is slightly sloping to the southeast with a veneer of gilsonite on the dump.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

Access to the site will need improvement prior to the commencement of reclamation. The CONTRACTOR shall improve access to the site along the route described to the degree

required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect the mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4092132VO005. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 11 feet by 3.5 feet wide. The top of the finished concrete/PUF cap shall be 2 feet below the level of the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

#### 4.04 TOWNSHIP 10 SOUTH, RANGE 21 EAST GROUP

##### A. GENERAL SUBGROUP LOCATION AND ACCESS

The T10S, R21E Site Group includes nine (9) of the project open sites. To access these 9 sites, continue straight ahead (south fork) after crossing the Ouray Bridge (south on Utah State Route 88, 17 miles from the intersection of U.S. Route 40 and Utah State Route 88). Stay to the right (south) and continue for 8.6 miles to another fork in the road. Stay left on the major road as it turns southeast (the right hand fork leads to Willow Creek). After another 0.6-mile, the pavement stops and turns into a well traveled gravel road. Proceed 1.3 miles on the gravel road to another fork. Stay to the right (straight) on the main road as it turns rather sharply to the south. Continue south on the main road another 4.6 miles. Then turn left (east) off the main gravel road at the Love Compressor Station sign and onto a smaller dirt road. Follow this road for 1.2 miles and there will be a "T" intersection in the dirt road. The access to the two sites in Section 32 and seven (7) sites in Section 29, T10S, R21E, will be described from this point.

##### B. INDIVIDUAL SITE LOCATIONS – DESCRIPTIONS AND WORK REQUIRED

The locations of the T10S, R21E Site Group mine sites are shown on Map Sheets D4 through D8, which are included in Appendix D.

#### 1. Site 4102129 VO001 (Backfill with Equipment)

##### a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005.

Vertical opening 4102129VO001 is located in the NW¼NW¼SE¼ of Section 29, T10S, R21E at an elevation of 5249 feet. Site VO001 is on the east side of the road, just inside a barbed wire fence. This vertical opening has several planks that cover parts of the opening, however most of the opening is exposed. Dimensions of the opening are 2.5 feet wide by 9.5 feet long. The opening is 93 feet deep. The site is surrounded by broken rocks and earth, however, no formal dump exists.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

The CONTRACTOR will first remove approximately 580 perimeter feet of 5-strand barbed wire fencing, complete with steel fence posts and wood corner bracing, which surrounds the two open sites 4102129VO001 and 4102129VO002. The wire will be neatly rolled and together with the steel fence posts will be disposed of in an approved landfill or used as scrap as per Section 2.01(G) above. The wooden fence braces and old planks covering 4102129VO001 will be stacked neatly away from the backfilled shaft. Earth-moving work at this site will require backfilling the 93-foot deep opening to the surface with approximately 85 cubic yards of material. Sufficient material for fill should be available from re-grading the surface in the surrounding area. Grade the backfill and borrow areas to blend with the adjacent terrain. The backfill will be mounded 2 foot high over the center of all filled surfaces and graded to promote positive drainage. This work can be done with equipment.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

The gilsonite vein is very continuous along strike length and appears to be near vertical in dip. The distance between 4102129VO001 and 4102129VO002 is approximately 96 feet in length and is covered with broken rock with broken black gilsonite exposed at the surface. It is unknown whether a thin crown pillar exists in this area. Therefore, the CONTRACTOR will first probe the 96-foot strike length of the gilsonite vein between 4102129VO001 and 4102129VO002 to test the thickness and integrity of any remaining crown pillar. If an air-track type drill is used for probing, the holes will be on 10-foot centers to a minimum depth of 15 feet, for a total of 9 long holes. If a backhoe is used, the vein will be exposed (at least bucket-width) to a minimum depth of 15 feet in at least 2 different equally spaced areas between 4102129VO001 and 4102129VO002. If it is determined that this area the crown pillar is thicker than 15 feet, then backfilling and re-grading is all that is necessary.

If it is determined that a crown pillar of less than 15 feet vertical thickness exists, then it shall be removed by the most expeditious method; either drilling with moil-type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in accordance with the specifications listed under Crown Pillar Excavation, Section 0255. If a crown pillar is less than 15 feet thick, it is anticipated that approximately 575 cubic yards of material would be necessary to fill the resultant opening if it extends to the (averaged) depth of 4102129VO001 and 4102129VO002. It should be noted that even though these openings are open to the surface, trapped gilsonite dust can be very explosive. In the event that trapped dust may exist, flammable products or procedures should not be used in testing or removing the gilsonite crown pillar. The broken surface material in the immediate vicinity is to be used to reclaim the remaining void in the mined-out area. If a crown pillar is found between 4102129VO001 and 4102129VO002 and additional fill material is required, the sloping hillside to the north and south of VO001 and VO002 can be re-terraced and the borrow material used for backfill. The backfill surface will be mounded 2 foot high over the center of the opening. Re-grade all borrow areas to blend with the adjacent terrain to promote positive drainage. This work can be done with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

2. Site 4102129 VO002 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005.

Vertical opening 4102129VO002 is located in the NW¼NW¼SE¼ of Section 29, T10S, R21E at an elevation of 5244 feet. Site VO002 is on the east side of the road, just inside a barbed wire fence and 96 feet in an easterly direction from VO001 described above. Dimensions of the opening are 2.5 feet wide by 22.0 feet long. The opening is 33 feet deep and on the easterly end slopes steeply to the surface. The site is surrounded by broken rocks and earth, but no formal dump.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

The barbed wire fence around this site is to have been removed per the description under site 4102129VO001 above. The possible crown pillar between sites VO001 and VO002 has also been covered under The Work for site 4102129VO001 above. Work at this site will require backfilling the opening 33.0 feet to the surface with approximately 45 cubic yards of material. The broken surface material in the immediate vicinity is to be used to reclaim the void in the mined-out opening. Sufficient fill should be available from re-grading the area. The sloping hillside north and south of VO002 is available for borrow material should additional be required. Grade the backfill and borrow areas to blend with the adjacent terrain. The backfill surface will be mounded 2 foot high over the center of the opening. All areas must be graded to promote positive drainage. This work can be done with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

3. Site 4102129 VO003 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the “T” mentioned above. At about 0.8 mile from the “T” there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the “T” there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005. An above ground natural gas pipeline is located parallel to the road isolating sites VO003-VO005. Access to sites VO003-VO005 will be at a point 0.2 miles north of VO003 where the road forks to the west. At this point the above ground gas pipeline paralleling the access road to the sites is buried beneath the road. Access from this point will be south cross-country taking care to minimize any damage to slopes, drainages or vegetation. Access along this route will be kept to once in and once out by construction equipment and minimal support vehicle activity.

Vertical opening 4102129VO003 is located in the NW¼NW¼SE¼ of Section 29, T10S, R21E at an elevation of 5253 feet. Site VO003 is on the west side of the road, about 18 feet inside a barbed wire fence. Dimensions of the opening are 2.0 feet wide by 87.5 feet long. The opening is 57 feet deep. The site is surrounded by broken rocks and earth, but no formal dump exists. There is a broken rock pile immediately to the south of this opening estimated to contain approximately 25 cubic yards of material. South and adjacent to sites 4102129VO003-VO005 (outside the barbed wire fence) is a slope that is estimated to contain in excess of 500 cubic yards of material. This slope is within 250 feet of VO003, 100 feet of VO004 and within 150 feet of VO005 respectively. The sloping hillside immediately to the west of sites VO003-VO005 is also available as a borrow site.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

The CONTRACTOR will first remove approximately 1,166 perimeter feet of 5-strand barbed wire fencing, complete with steel fence posts and wood corner bracing, which surrounds the three open sites 4102129VO003, 4102129VO004 and 4102129VO005. The wire will be neatly rolled and together with the steel fence posts will be disposed of in an approved landfill or used as

scrap as per Section 2.01(G) above. Work at this site will require probing 2 sites for possible crown pillars (between VO003-VO004, and between VO003 and VO001) and backfilling site 4102129VO003 for 57.0 feet to the surface with approximately 385 cubic yards of material. The borrow areas described in Section A under this site are to be used for backfill material. Grade the backfill and borrow areas to blend with the adjacent terrain. The backfill will be mounded 2 foot high over the center of all filled surfaces and graded to promote positive drainage. This work can be done with equipment.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

The gilsonite vein is very continuous along strike length in this area and appears to be near vertical in dip. Two areas of crown pillar probing will be covered under this site. The first to be addressed is between VO003 and VO004, approximately 190 feet. The second is between VO003 and VO001, across the main gravel road, a distance of approximately 50 feet.

The distance between 4102129VO003 and 4102129VO004 is approximately 190 feet in length and is covered with broken rock with some black gilsonite exposed at the surface. It is unknown whether a thin crown pillar exists in this area. Therefore, the CONTRACTOR will probe the 190-foot strike length of the gilsonite vein between 4102129VO003 and 4102129VO004 to test the thickness and integrity of any remaining crown pillar. If an air-track type drill is used for probing, the holes will be on 10-foot centers to a minimum depth of 15 feet, for a total of 18 probe holes. If a backhoe is used, the vein will be exposed (at least bucket width) to a minimum depth of 15 feet in at least 5 different areas equally spaced between 4102129VO003 and 4102129VO004. If it is determined that this area has already been filled or that the intact vein is thicker than 15 feet, then backfilling and re-grading the probe excavations is all that is necessary.

If it is determined that a crown pillar of less than 15 feet vertical thickness exists, then it shall be removed by the most expeditious method; either drilling with moil type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in accordance with the specifications listed under Crown Pillar Excavation, Section 0255. If a thin crown pillar is present between VO003 and VO004, it is anticipated that approximately 1,100 cubic yards of material would be necessary to fill the resultant opening if it extends to the (averaged) depth of 4102129VO003 and 4102129VO004. The borrow areas mentioned in Section (a) above have sufficient fill material. It should be noted that even though these openings are open to the surface, trapped gilsonite dust can be very explosive. In the event that trapped dust may exist, flammable products or procedures should not be used in testing or removing the gilsonite crown pillar. Re-grade all borrow areas to blend with the adjacent terrain to promote positive drainage. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

The distance between 4102129VO003 and 4102129VO001 is approximately 50 feet in length, however the main gravel road runs perpendicular (in a N-S direction) over this section. There is no black gilsonite exposed at the surface, however, it is unknown whether a thin crown pillar may exist underneath the present gravel road between these two sites. It is therefore necessary to probe the vein area that extends beneath the road. Before any probing work in this area is undertaken, it will be necessary to have completed reclamation at sites VO001 and VO002 and the area in between as described above. The gravel road (between VO003 and VO001) will then be re-routed approximately 50 feet to the east over the now de-fenced and backfilled area between sites VO001 and VO002. It is estimated that 200 feet of road will need to be temporarily re-routed to the east while probing and possible reclamation is conducted. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR will then probe the 50-foot strike length of the gilsonite vein between 4102129VO003 and 4102129VO001 to test the thickness and integrity of any remaining crown pillar. If an air-track type drill is used for probing, the holes will be on 10-foot centers to a minimum depth of 15 feet, for a total of 4 probe holes. If a backhoe is used, the vein will be

exposed (at least bucket width) to a minimum depth of 15 feet in at least 1 area between 4102129VO003 and 4102129VO001. If it is determined that this area has already been filled or that the intact vein is thicker than 15 feet, then backfilling and re-grading is all that is necessary.

If it is determined that a crown pillar of less than 15 feet vertical thickness exists, then it shall be removed by the most expeditious method; either drilling with moil type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in accordance with the specifications listed under Crown Pillar Excavation, Section 0255. The broken material from the crown pillar will be placed into the void and used as backfill. If a thin crown pillar is present between VO003 and VO001, it is anticipated that approximately 385 cubic yards of material would be necessary to fill the resultant opening if it extends to the (averaged) depth and width of 4102129VO003 and 4102129VO001. The borrow areas mentioned in Section (a) above have sufficient fill material. It should be noted that even though these openings are open to the surface, trapped gilsonite dust can be very explosive. In the event that trapped dust may exist, flammable products or procedures should not be used in testing or removing the gilsonite crown pillar. Re-grade all borrow areas to blend with the adjacent terrain to promote positive drainage. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

4. Site 4102129 VO004 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005. An above ground natural gas pipeline is located parallel to the road isolating sites VO003-VO005. Access to sites VO003-VO005 will be at a point 0.2 miles north of VO003 where the road forks to the west. At this point the above ground gas pipeline paralleling the access road to the sites is buried beneath the road. Access from this point will be south cross-country taking care to minimize any damage to slopes, drainages or vegetation. Access along this route will be kept to once in and once out by construction equipment and minimal support vehicle activity.

Vertical opening 4102129VO004 is located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 29, T10S, R21E at an elevation of 5254 feet. Site VO004 is on the west side of the road, approximately 295 feet inside a barbed wire fence. This site is a timbered shaft and the general site is strewn with varying sizes of old mine timbers (with nails), steel cable, tin cans and pipe. Dimensions of the opening are 2.0 feet wide by 12.0 feet long. The opening is 95.0 feet deep. The shaft timbers extend approximately 2-4 feet above the surface. The site is surrounded by broken rocks and earth. There is a broken rock pile immediately to the north of this opening estimated to contain approximately 15 cubic yards of material. Immediately north and adjacent to sites 4102129VO003-VO005 (outside the barbed wire fence) is a rock mound that is estimated to contain in excess of 500 cubic yards of material. This mound is within 100 feet of VO003, 350 feet of VO004 and within 500 feet of VO005 respectively. The sloping hillside immediately to the west of sites VO003-VO005 is also available as a borrow site.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

The barbed wire fence around this site is to have been removed per the description under site 4102129VO003 above. The possible crown pillar between sites VO003-VO004 and VO003-VO001 has also been covered under The Work for site 4102129VO003 above. The CONTRACTOR shall remove the mine timbers from the shaft collar and any other timber that may obstruct backfilling. The timber shall be neatly stacked away from the backfilled shaft. Earthwork at this site will require backfilling the shaft opening 95.0 feet to the surface with approximately 87 cubic yards of material. The borrow areas described in Section A under this site are to be used for backfill material. The backfill surface will be mounded 2 foot high over the center of the shaft. Then grade the backfill and borrow areas to blend with the adjacent terrain. All areas must be graded to promote positive drainage. This work can be done with equipment.

All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

5. Site 4102129 VO005 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005. An above ground natural gas pipeline is located parallel to the road isolating sites VO003-VO005. Access to sites VO003-VO005 will be at a point 0.2 miles north of VO003 where the road forks to the west. At this point the above ground gas pipeline paralleling the access road to the sites is buried beneath the road. Access from this point will be south cross-country taking care to minimize any damage to slopes, drainages or vegetation. Access along this route will be kept to once in and once out by construction equipment and minimal support vehicle activity.

Vertical opening 4102129VO005 is located in the NE $\frac{1}{4}$  NE $\frac{1}{4}$  SW $\frac{1}{4}$  of Section 29, T10S, R21E at an elevation of 5260 feet. Site VO005 is on the west side of the road, approximately 425 feet inside a barbed wire fence. Dimensions of the opening are 6.5 feet wide by 27.0 feet long. The opening is 32.0 feet deep at the deepest part, however there is a rock bench extending approximately half the length of the opening and this bench is 16.0 feet below the surface. There is a visible 7-foot thick crown pillar extending over the eastern and deepest end of this site. The site is surrounded by broken rocks and earth, but no formal dump. Immediately north and adjacent to sites 4102129VO003-VO005 (outside the barbed wire fence) is a rock mound that is estimated to contain in excess of 500 cubic yards of material. This mound is within 100 feet of VO003, 350 feet of VO004 and within 500 feet of VO005 respectively. The sloping hillside immediately to the west of VO005 is also available as a borrow site.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

The barbed wire fence around this site is to have been removed per the description under site 4102129VO003 above. Earthwork at this site will require backfilling the opening 32.0 feet to the surface with approximately 120 cubic yards of material. The borrow areas described in Section A under this site are to be used for backfill material. The visible crown pillar is to be removed with either moil drilling or backhoe and broken material placed in the opening. Grade the backfill and borrow areas to blend with the adjacent terrain. The backfill will be mounded 2 foot high over the center of all filled surfaces and graded to promote positive drainage. This work can be done with equipment.

The gilsonite vein is very continuous along strike length and appears to be near vertical in dip. The distance between 4102129VO004 and 4102129VO005 is approximately 118 feet in length and is covered with broken rock with broken black gilsonite exposed at the surface. It is unknown whether a thin crown pillar exists along the entire length in this area. Therefore, the CONTRACTOR will probe the 118-foot strike length of the gilsonite vein between 4102129VO004 and 4102129VO005 to test the thickness and integrity of any remaining crown pillar. If an air-track type drill is used for probing, the holes will be on 10-foot centers to a minimum depth of 15 feet, for a total of 11 holes. If a backhoe is used, the vein will be exposed via a bucket-width cut to a minimum depth of 15 feet in at least 3 different areas spaced an equal distance (roughly 30 feet) apart between 4102129VO003 and 4102129VO004. If it is determined that this area has already been filled or that the intact vein is thicker than 15 feet, then backfilling and re-grading is all that is necessary.

If it is determined that a crown pillar of less than 15 feet vertical thickness exists, then it shall be removed by the most expeditious method; either drilling with moil type long hole equipment (as is currently being used in the on-going gilsonite operations in the area) or by backhoe in

accordance with the specifications listed under Crown Pillar Excavation, Section 0255. The broken material from the crown pillar excavation is to be used for fill material. If a thin crown pillar is present, it is anticipated that approximately 1,290 cubic yards of material would be necessary to fill the resultant opening if it extends to the (averaged) depth and width of 4102129VO004 and 4102129VO005. The borrow areas described in Section A under this site are to be used for backfill material.

Immediately west and uphill along strike from VO005, the ground is disturbed in a shallow trench fashion in the vein area. This area will undoubtedly have been uncovered previously in the borrowing process for the other sites. If this area has not already been uncovered via using this as a borrow site, this approximate 40 foot trench should be probed as described above, with either 3 long holes or 1 bucket-width backhoe cut spaced equally apart. Based upon the depth of the adjacent VO005, it is feasible that approximately 308 cubic yards of material might be needed to fill this potential opening. The borrow site for this would be the unconsolidated material on the adjacent hillside immediately uphill and to the west. It should be noted that even though these openings are open to the surface, trapped gilsonite dust can be very explosive. In the event that trapped dust may exist, flammable products or procedures should not be used in testing or removing the gilsonite crown pillar. Re-grade all borrow areas to blend with the adjacent terrain to promote positive drainage. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

6. Site 4102129 VO006 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005. To get to VO006, continue past Sites VO001-VO005 on this same road approximately 0.3 miles further and around a sweeping right turn, there is a rough gravel wash road (Cottonwood Wash) that departs to the right off the main gravel road. Taking this wash road in about 300 yards, one will see site VO006 up to the right on the hill, also surrounded by barbed wire fencing.

Vertical opening 4102129VO006 is located in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 29, T10S, R21E at an elevation of 5240 feet. Site VO006 is on the west side and above the Cottonwood Wash drainage and road as described previously. VO006 is approximately  $\frac{1}{4}$  mile east of 4102120VO002, although there is no road from VO002 to this site at present. The site is located about 25 feet inside a 4-foot high, 4-strand barbed wire fence. Dimensions of the opening are 2.0 feet wide by 26.0 feet long. The opening is 8.0 feet deep in the center of the slot, with both ends sloping towards the surface, particularly on the east side. The site is surrounded by broken rocks and earth. Small rusty cans are present, however, there is no mine dump at this site.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

The CONTRACTOR will need to improve access from the bottom of Cottonwood Wash to the site prior to reclamation, which is approximately 4 feet up a bank and then slightly uphill and 255 feet to the fenced site. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

There is no surface evidence of mining activity or gilsonite present along the quarter mile distance between sites VO002 and VO006, therefore no probing is indicated for this area. For

site VO006, the CONTRACTOR will first remove approximately 334 perimeter feet of 4-strand barbed wire fencing, complete with steel fence posts and wood corner bracing, which surrounds sites 4102129VO006. The wire will be neatly rolled and together with the steel fence posts will be disposed of in an approved landfill or used as scrap as per Section 2.01(G) above. Any tin cans and other debris will be placed away from the vertical opening and replaced when the opening is reclaimed. Any wooden fence braces will be stacked neatly away from the backfilled opening. Earthwork at this site will require backfilling the opening 8.0 feet to the surface with approximately 19.0 cubic yards of material. This work could be done by hand scaling and shovel, however, if a backhoe is present and used to remove the steel fence posts, then this would be the most expeditious method. There is sufficient material in the immediate vicinity to re-grade the area and use this for fill. Then re-grade area to blend with the adjacent terrain. The backfill surface will be mounded 2 foot high over the center of the opening. All areas must be graded to promote positive drainage. This work can be done easily with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

7. Site 4102129 VO007 (Backfill with Equipment)

a. Location and Description

For access to the 7 sites in Section 29, turn left, or north, at the "T" mentioned above. At about 0.8 mile from the "T" there is a minor fork in the road to the left, however stay straight (right) on the main dirt road. At 1.5 miles from the "T" there will be barbed wire fences on both sides of the road around the locations of sites VO001-VO005. Following this same road approximately 0.3 miles further and around a sweeping right turn, there is a rough gravel wash road (Cottonwood Wash) that departs to the right off the main gravel road. This wash road to the right is the entrance to site VO006. For site VO007, continue past Cottonwood Wash and straight on the main gravel road (southeast) for another 0.5 mile. There is a visible concrete-capped shaft on the right and just past this is open site VO007 up and to the right and surrounded by fencing.

Vertical Opening 4102129VO007 is located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 29, T10S, R21E at an elevation of 5301 feet. Site VO007 is on the south side and approximately 45 feet along slope above the road. There is a small access road on the east end of this site leading from the main gravel road (discussed above) up to the fenced opening. The site is surrounded by a combination link and barbed wire fence (5 feet high) and is posted with signs reading DANGER...Caving Area...Keep Out. Dimensions of the opening are 5.5 feet wide by 39.0 feet long. The opening is 15.0 feet deep. There is a visible rectangular-shaped concrete collar structure that extends 1.5 feet above the ground level and downward about 6 feet below the ground surface. The horizontal footprint of this concrete structure is roughly 16 feet long by 8 feet wide by 7.5 feet in total height. The southern, eastern and western walls of the structure are 6" thick, while the northern wall is 15" thick. It is not known if there is steel reinforcing in the structure. Within the fenced perimeter there is some scattered trash and debris. The site is in the lower portion of an exposed rock hillside. There is no dump material nearby.

b. The Work

The CONTRACTOR shall not be required to exclude bats from this shaft.

There is no significant surface evidence of mining activity or gilsonite present between the capped shaft mentioned above and VO007, therefore no probing is indicated for this area. For site VO007, the CONTRACTOR will first remove approximately 130 perimeter feet of combination 4-foot high wire fence topped with 2-strands of barbed wire, complete with steel fence posts and wood corner bracing, which surrounds sites 4102129VO007. The wire will be neatly rolled and together with the steel fence posts will be disposed of in an approved landfill or used as scrap as per Section 2.01(G) above. Any tin cans and other debris will be placed away from the vertical opening and replaced when the opening is reclaimed. Any wooden fence braces will be stacked neatly away from the backfilled opening. The concrete collar structure described in Section A above contains approximately 11.1 cubic yards of concrete. The

CONTRACTOR will not disturb this structure as practical during the backfilling of the shaft. Earthwork at this site will require backfilling the opening 15.0 feet to the surface with approximately 135 cubic yards of material. Adjacent rock/soil materials to the south and below this site (short access road) are available for a borrow site. After filling the hole, re-grade the area to blend with the adjacent terrain. The backfill surface will be mounded 2 foot high over the center of the opening. All areas must be graded to promote positive drainage. This work can be done with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

8. Site 4102132 VO001 (PUF - Bats)

a. Location and Description

The "T" in the dirt road (1.2 miles east from the main gravel road and Love Compressor Station sign) that has been the locus for all the sites in Section 29 will also serve as the locus for the two sites in Section 32. The access to the two open sites in Section 32, T10S, R21E, will be described from this point and are easily located from the "T" in the road. Both sites in Section 32 are within a half-mile of this "T". To access VO001 in Section 32, turn left (north) at the "T" and travel a quarter mile and there is a faint road which forks to the left. Take this road about 80 yards and you will see the black gilsonite coloring on the left. The open shaft VO001 is at this site.

Vertical Opening 4102132VO001 is located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 32, T10S, R21E at an elevation of 5360 feet. Site VO001 is on the west side of the faint access road described above. The site is surrounded on both sides by black gilsonite cuttings and the site is openly exposed with no fencing or signs present. Some small debris is present. Dimensions of the opening are 1.5 feet wide by 47.0 feet long. The opening is 64.0 feet deep. There are visible stull supports in the trench opening below ground surface. The site is surrounded by broken rocks, earth, and mounds of gilsonite, but no formal dump. Immediately south (approximately 100 feet) of the open trench is a bank of loosely consolidated rocks and earth along a gently upward sloping hillside.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

The CONTRACTOR shall protect the mine timbers (short stulls) within the shaft. The wooden stull supports that are sub-surface should not interfere with backfilling this site, however, those that are within 5 feet of the surface and that can be removed safely may be removed if necessary before placement of PUF. The CONTRACTOR will stack any wooden debris neatly away from the exposed trench. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. If earth-moving work is required at the site, the mine timbers will be left intact as practical and other debris will be placed away from the opening and replaced after closure of the vertical opening.

The CONTRACTOR will be required to install a Shaft PUF (Polyurethane Foam) Closure of 4102132VO001. The CONTRACTOR will fabricate this closure on site per the dimensions determined by CONTRACTORS field measurements and as approved by the OWNER. It is estimated that the closure will have a PUF length of 47 feet by 1.5 feet wide. The top of the finished concrete/PUF cap shall be 2 feet below the level of the collar to retain the historic appearance of the shaft. One foot of native rock/soil will be placed on the top of the finished concrete cap. Borrow material location will be determined in the field as approved by the OWNER and away from any historical materials. Construction estimates for this PUF closure are provided in the table located in Section 0300, Part 3.01.M. on page 122. Fabrication and installation shall be conducted in accordance with Technical Specification Sections 0250 through 0254 and as shown on the Drawings in Appendix E. Grade the backfill and borrow areas to blend with the adjacent terrain. All areas must be graded to promote positive drainage. This

work can be done with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on the borrow area adjacent to this site.

9. Site 4102132 VO002 (Backfill with Equipment - Bats)

a. Location and Description

The "T" in the dirt road (1.2 miles east from the main gravel road and Love Compressor Station sign) that has been the locus for all the sites in Section 29 will also serve as the locus for the two sites in Section 32. The access to the two open sites in Section 32, T10S, R21E, will be described from this point and are easily located from the "T" in the road. Both sites in Section 32 are within a half-mile of this "T". To access VO002 in Section 32, look east from the "T" in the road mentioned previously. There is a faint, 'cow pasture' road that continues east at the "T". Following this road until it ends (about 0.5 mile) will place you at site VO002 in Section 32, however, the last 300 yards of this road is very rough and strictly high-clearance 4-wheel drive or equivalent vehicle.

Vertical opening 4102132VO002 is located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 32, T10S, R21E at an elevation of 5331 feet. Site VO002 is located at the end of the rough 4-wheel drive section of the road described above. The site is evidenced from the end of the road on the south side by black gilsonite rock cuttings and visible shaft collar timbers above the ground level. Although the road does not end directly at the site, the approximate 100-foot distance from the road to the site is level and unobstructed. The site is openly exposed with no fencing or signs present. Some small debris is present. Dimensions of the opening are 2.0 feet wide by 10.0 feet long by 50.0 feet deep. Visible timber linings exist at least 15 feet below the surface. The site is surrounded by small mounds of gilsonite, but no formal dump. Approximately 25 feet west of the open shaft is a hillside of loosely consolidated sedimentary rocks and earth. There is sufficient material in this hillside to be used as a borrow location for this site.

b. The Work

The CONTRACTOR shall exclude bats from this shaft prior to any closure activity in accordance with Technical Specification 0250 – Mine Closures.

The CONTRACTOR will need to improve access from the end of the 'cow pasture' road to the VO002 site itself (approximately 100 feet) and to the borrow site hillside immediately to the west. The CONTRACTOR shall improve access to the site along the route described to the degree required to conduct the WORK. Where access has been created, the access shall be closed following construction. Access improvement and closure shall be performed in accordance with Technical Specification 0230. Access grading shall be in accordance with Section 0270 - Earthwork/Grading.

The CONTRACTOR shall protect any mine timbers (short stulls) within and around the shaft. A small amount of other debris consisting of broken glass, metal and china shall also be protected during closure reclamation. The mine timbers will be left intact as practical and other debris will be placed away from the opening and replaced after closure of the vertical opening. Earthwork at this site will require backfilling the opening 50 feet to the surface with approximately 39 cubic yards of material from re-grading/re-contouring the surrounding area and from the adjacent hillside to the west if necessary. Once the shaft is filled, grade the backfill and borrow areas to blend with the adjacent terrain. The backfill surface will be mounded 2 foot high over the center of the shaft. All areas must be graded to promote positive drainage. This work can be done with equipment. All backfilling shall be conducted in accordance with Technical Specification Section 0250 - Mine Closures, and as shown on the Technical Specification Design Drawings in Appendix E.

It is anticipated that revegetation will be performed on this site and the borrow area adjacent to this site.

END OF SECTION 0300

